



2015

Scientific Publications





King Abdullah International Medical Research Center

KAIMARC

FOREWORD

King Abdullah International Medical Research Center (KAIMRC), in collaboration with the Ministry of National Guard Health Affairs (MNGHA) and King Saud bin Abdulaziz University for Health Science (KSAUHS) is proud to present the scientific publications for the year 2015. The publications are from authors across the academic medical center.

Publications were sourced from various websites, for example Scopus and ISI. The searches were based on affiliation. Improved communication between the authors and KAIMRC's Publication Office will ensure that all articles are published in the annual publication book.

We hope the book will be a useful reference for future research. Please use the short links at the bottom of each page for directions to the article or a downloadable PDF of the article.

Publications provide the national and international community an opportunity to explore and comment on the most advanced and novel basic, translational and clinical research conducted in KAIMRC, KSAUHS and MNG-HA. We will endeavor to optimize our research services across the organization.

Should you have questions, comments or concerns, please contact KAIMRC-puboffice@ngha.med.sa.

2015

TABLE OF CONTENTS

KING ABDULLAH INTERNATIONAL MEDICAL RESEARCH CENTER

KAIMRC

All Sections.....	5
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MINISTRY OF NATIONAL GUARD – HEALTH AFFAIRS

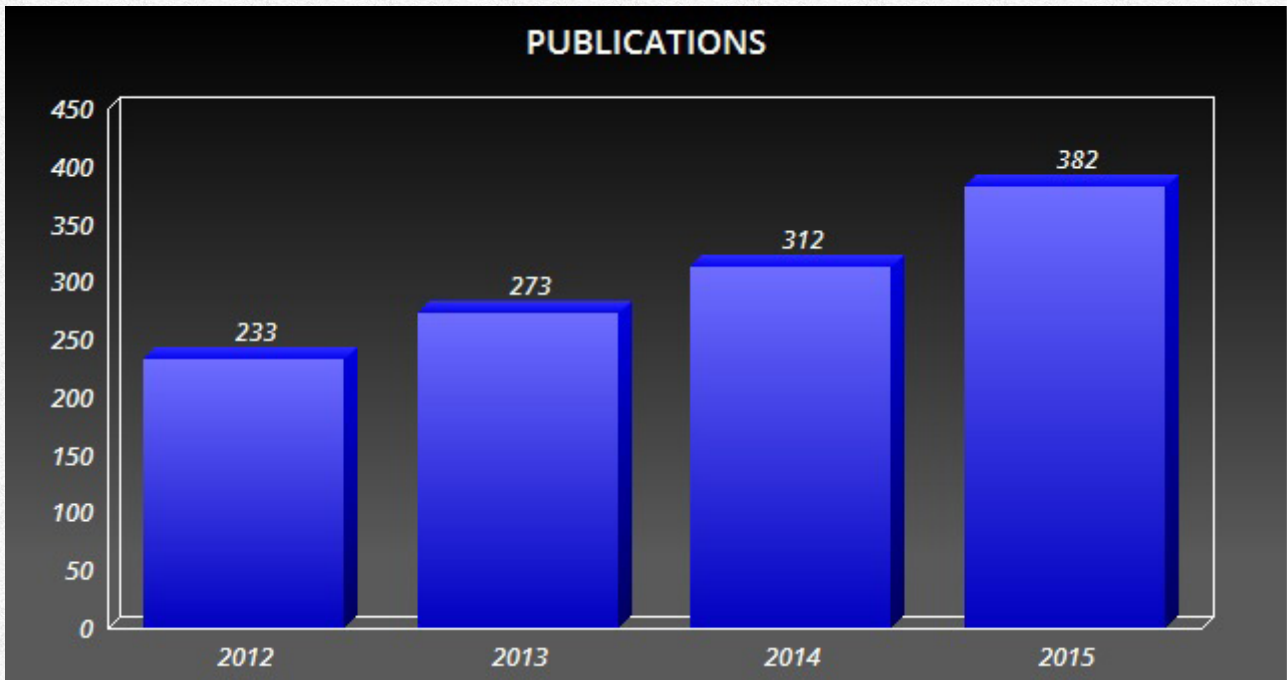
MNGHA-HA

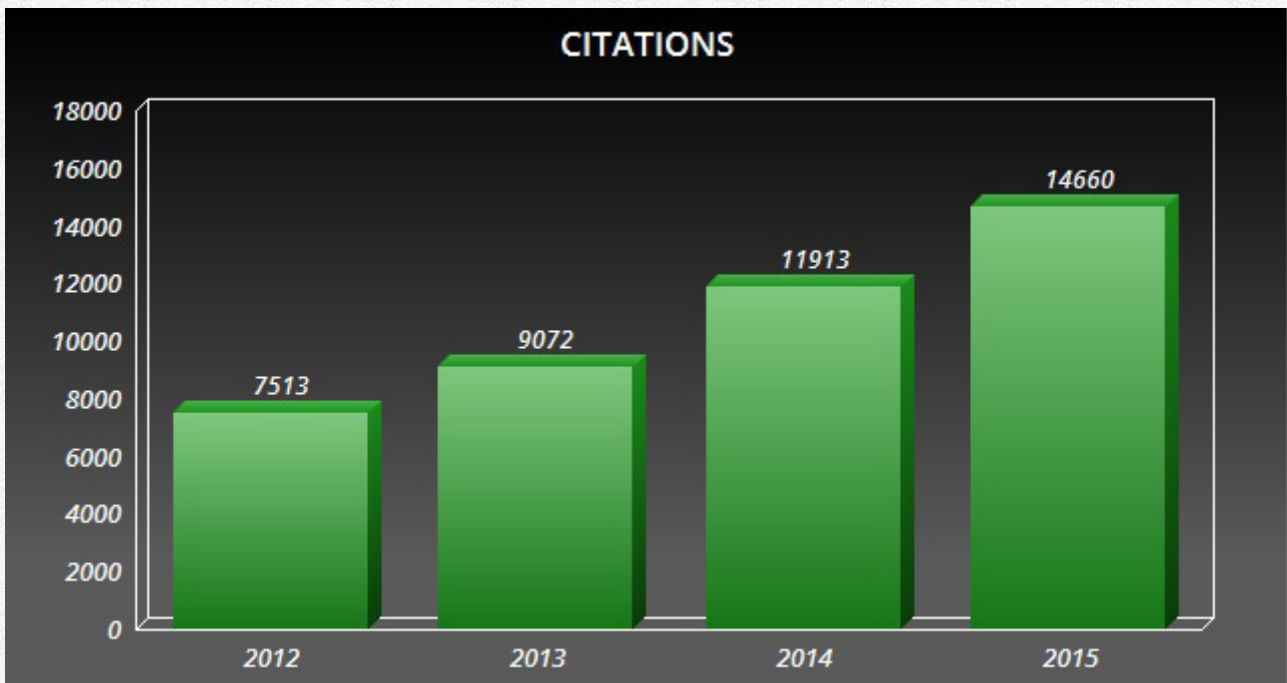
Cardiology.....	95
Dental.....	107
Department of Medicine.....	110
Emergency Medicine.....	128
Hepatobiliary.....	134
Infection Prevention and Control.....	135
Intensive Care.....	143
Medical Imaging.....	149
Obstetrics and Gynecology.....	154
Oncology.....	157
Ophthalmology.....	176
Pathology.....	177
Pediatrics.....	182
Pharmacology.....	206
Surgery.....	208
Other.....	221

KING SAUD BIN ABDULAZIZ UNIVERSITY FOR HEALTH SCIENCES

KSAU-HS

Applied Medical Sciences.....	223
Basic Medical Sciences.....	228
Cardiology.....	245
Clinical Laboratory Sciences.....	248
College of Nursing.....	251
College of Medicine.....	255
College of Science and Health Professions.....	289
Dentistry.....	307
Department of Medicine.....	316
Diabetes and Epidemiology.....	323
Epidemiology and Biostatistics.....	325
Infection Prevention and Control.....	328
Intensive Care Medicine.....	330
Medical Education.....	334
Medical Imaging.....	342
Obstetrics and Gynecology.....	344
Oncology.....	347
Pathology.....	351
Pediatrics.....	353
Pharmacology.....	362
Public Health and Health Informatics.....	369
Other.....	383





Title: Accuracy of Canadian CT head rule in predicting positive findings on CT of the head of patients after mild head injury in a large trauma centre in Saudi Arabia

Author(s): Arab, A. F., Ahmed, M. E., Ahmed, A. E., Hussein, M. A., Khankan, A. A., et al.

Affiliation: King Saud Bin AbdulAziz University for Health Sciences, Saudi Arabia; ^{2,5} Medical Imaging, King AbdulAziz Medical City National Guards Health Affairs, Saudi Arabia; Department of Epidemiology and Biostatistics, King Saud Bin AbdulAziz University for Health Sciences, Saudi Arabia; King Abdullah International Medical Research Center, Saudi Arabia; et al.

Abstract:

BACKGROUND:

Investigation of unjustified computed tomography (CT) scan in patients with minor head injury is lacking in Saudi Arabia. The purpose of the study was to evaluate the compliance and effectiveness of the Canadian computed tomography head rule (CCHR) in our emergency department (ED) and trauma centre and also to reduce the number of unjustified CT studies of the head in the centre.

METHODS:

A retrospective study of 368 ED patients with minor head injury was conducted. Patients who underwent CT scan between July 2010 and June 2011 were selected from the ED head trauma registry by systematic randomisation. The CCHR was retrospectively applied on the patients' charts to calculate the prevalence of unjustified head CT scans. A separate survey was conducted to evaluate three emergency physicians' level of awareness about the CCHR and their ability to determine the necessity of CT scans with various clinical scenarios of head injury.

RESULTS:

The prevalence of unjustified CT scans as per the CCHR was 61.8% (95% confidence interval (CI) 56.5-66.9%). Approximately 5% of the sample had positive CT findings with 95% CI 2.9-7.6%. The CCHR correctly identified 12 cases with positive CT findings with 66.67% sensitivity. Only 24 (6.7%) had Glasgow coma scale scores less than 15 (13/14). The Glasgow coma scale correctly identified only two cases with positive CT findings with 11.11% sensitivity. The percentage of skull fracture (0.9% vs 5%, $P=0.030$) was significantly lower in patients with unjustified CT scans than in patients with clinically justified CT scans. There was fair to substantial agreement between the ED physicians and the CCHR ($\kappa=35-61\%$). Two ED physicians identified all cases of justified CT scan with 100% sensitivity (95% CI 71.51-100%).

CONCLUSION:

The level of education regarding the CCHR was found to be optimal among emergency physicians using a case-based scenario survey. The CCHR was found to have a poor compliance potential in the busy ED of our trauma centre and the prevalence of unjustified cranial CT scans remained high.

Journal: Neuroradiology Journal

Year of Publication: 2015

Publication issue: 28(6)

Page numbers: 591-597

SHORTLINK: Bit.ly/1XzEguW

Title: Cost-minimization analysis of imipenem/cilastatin versus meropenem in moderate to severe infections at a tertiary care hospital in Saudi Arabia

Author(s): Joosub, I., Gray, A., Crisotomo, A. & Salam, A.

Affiliation: Prince Muhammed bin Abdulaziz Hospital, Al-Madina, Saudi Arabia; Discipline of Pharmaceutical Sciences, University of KwaZulu-Natal, South Africa; King Abdulaziz Hospital, Al-Ahsa, Saudi Arabia; King Abdullah International Medical Research Center-Eastern Region, Ministry of National Guard Health Affairs, Al-Hasa, Saudi Arabia.

Abstract:

Aim: The aim of this study was to compare the costs of management of moderate to severe infections in patients treated with imipenem/cilastatin (IC) and meropenem (MEM). Pharmacoeconomic studies in Saudi Arabia are scarce. The current hospital formulary contains 2 carbapenems: IC and MEM. These antibiotics share a similar spectrum of activity. There are conflicting reviews with regard to the relative cost-effectiveness of these two agents. **Methods:** A retrospective, single-centre cohort study of 88 patients of IC versus MEM in moderate to severe infections was performed, applying cost-minimization analysis (CMA) methods. In accordance with CMA methods, the assumption of equivalent efficacy was first demonstrated by literature retrieved and appraised. Adult patients (P18 years old) diagnosed with moderate to severe infections, including skin and skin structure infections (SSIs), sepsis, intra-abdominal infections (IAIs), respiratory tract infections, urinary tract infections (UTIs) and hospital-acquired infections (HAIs), who were prescribed IC 500 mg every six hours intravenously (2 g per day) or MEM 1 g every eight hours (3 g per day), were included in the study. Only direct costs related to the management of the infections were included, in accordance with a payer perspective. **Results:** Overall there was no difference in the mean total daily costs between IC (SAR 4784.46, 95% CI 4140.68, 5428.24) and MEM (4390.14, 95% CI 3785.82, 4994.45; $p=0.37$). A significantly lower medicine acquisition cost per vial of IC was observed when compared to MEM, however there was a significantly higher cost attached to administration sets used in the IC group than the MEM group. Consultation, nursing and physician costs were not significantly different between the groups. No differences were observed in costs associated with adverse drug events (ADEs). **Conclusion:** This study has shown that while acquisition costs of IC at a dose of 500 mg q6 h may be lower than for MEM 1 g q8 h, mean total costs per day were not significantly different between IC and MEM, indicating that medicine costs are only a small element of the overall costs of managing moderate to severe infections.

Journal: Saudi Pharmaceutical Journal

Year of Publication: 2015

Publication issue: 23(6)

Page numbers: 626-634

SHORTLINK: bit.ly/28h2m0u

Title: Molecular Epidemiology of Carbapenem-Resistant *Acinetobacter baumannii* Isolates in the Gulf Cooperation Council States: Dominance of OXA-23-Type Producers

Author(s): Zowawi, H. M., Sartor, A. L., Sidjabat, H. E., Balky, H. H., Walsh, T. R., et al.

Affiliation: University of Queensland, Australia; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; University of Queensland, Centre for Clinical Research, Australia; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; King Abdullah International Medical Research Centre, Riyadh, Saudi Arabia; School of Medicine, Cardiff University, Heath Park, UK; et al.

Abstract:

The molecular epidemiology and mechanisms of resistance of carbapenem-resistant *Acinetobacter baumannii* (CRAB) were determined in hospitals in the states of the Cooperation Council for the Arab States of the Gulf (Gulf Cooperation Council [GCC]), namely, Saudi Arabia, United Arab Emirates, Oman, Qatar, Bahrain, and Kuwait. Isolates were subjected to PCR-based detection of antibiotic resistance genes and repetitive sequence-based PCR (rep-PCR) assessments of clonality. Selected isolates were subjected to multilocus sequence typing (MLST). We investigated 117 isolates resistant to carbapenem antibiotics (either imipenem or meropenem). All isolates were positive for OXA-51. The most common carbapenemases were the OXA-23-type, found in 107 isolates, followed by OXA-40-type (OXA-24-type), found in 5 isolates; 3 isolates carried the ISAbal element upstream of blaOXA-51-type. No OXA-58-type, NDM-type, VIM-type, or IMP-type producers were detected. Multiple clones were detected with 16 clusters of clonally related CRAB. Some clusters involved hospitals in different states. MLST analysis of 15 representative isolates from different clusters identified seven different sequence types (ST195, ST208, ST229, ST436, ST450, ST452, and ST499), as well as three novel STs. The vast majority (84%) of the isolates in this study were associated with health care exposure. Awareness of multidrug-resistant organisms in GCC states has important implications for optimizing infection control practices; establishing antimicrobial stewardship programs within hospital, community, and agricultural settings; and emphasizing the need for establishing regional active surveillance systems. This will help to control the spread of CRAB in the Middle East and in hospitals accommodating transferred patients from this region.

Journal: Journal of Clinical Microbiology

Year of Publication: 2015

Publication issue: 53(3)

Page numbers: 896-903

SHORTLINK: bit.ly/1VJvxnR

Title: Knockdown of CDK2AP1 in Primary Human Fibroblasts Induces p53 Dependent Senescence

Author(s): Alsayegh, K. N., Gadepalli, V. S., Iyer, S. & Rao, R.R.

Affiliation: Department of Human and Molecular Genetics, Virginia Commonwealth University, USA; King Abdullah International Medical Research Center, Jeddah, Saudi Arabia; Integrated Life Sciences Program, Virginia Commonwealth University, USA; Center for the Study of Biological Complexity, Virginia Commonwealth University, USA; Department of Chemical and Life Sciences Engineering, Virginia Commonwealth University, USA; Department of Human and Molecular Genetics, Virginia Commonwealth University, USA.

Abstract:

Cyclin Dependent Kinase-2 Associated Protein-1 (CDK2AP1) is known to be a tumor suppressor that plays a role in cell cycle regulation by sequestering monomeric CDK2, and targeting it for proteolysis. A reduction of CDK2AP1 expression is considered to be a negative prognostic indicator in patients with oral squamous cell carcinoma and also associated with increased invasion in human gastric cancer tissue. CDK2AP1 overexpression was shown to inhibit growth, reduce invasion and increase apoptosis in prostate cancer cell lines. In this study, we investigated the effect of CDK2AP1 downregulation in primary human dermal fibroblasts. Using a short-hairpin RNA to reduce its expression, we found that knockdown of CDK2AP1 in primary human fibroblasts resulted in reduced proliferation and in the induction of senescence associated beta-galactosidase activity. CDK2AP1 knockdown also resulted in a significant reduction in the percentage of cells in the S phase and an accumulation of cells in the G1 phase of the cell cycle. Immunocytochemical analysis also revealed that the CDK2AP1 knockdown significantly increased the percentage of cells that exhibited γ -H2AX foci, which could indicate presence of DNA damage. CDK2AP1 knockdown also resulted in increased mRNA levels of p53, p21, BAX and PUMA and p53 protein levels. In primary human fibroblasts in which p53 and CDK2AP1 were simultaneously downregulated, there was: (a) no increase in senescence associated beta-galactosidase activity, (b) decrease in the number of cells in the G1-phase and increase in number of cells in the S-phase of the cell cycle, and (c) decrease in the mRNA levels of p21, BAX and PUMA when compared with CDK2AP1 knockdown only fibroblasts. Taken together, this suggests that the observed phenotype is p53 dependent. We also observed a prominent increase in the levels of ARF protein in the CDK2AP1 knockdown cells, which suggests a possible role of ARF in p53 stabilization following CDK2AP1 knockdown. Altogether, our results show that knockdown of CDK2AP1 in primary human fibroblasts reduced proliferation and induced premature senescence, with the observed phenotype being p53 dependent.

Journal: Plos One

Year of Publication: 2015

Publication issue: 10(3)

Page numbers: -

SHORTLINK: bit.ly/1U5rj7H

Title: Escherichia coli necrotizing fasciitis in Hirschsprung's disease

Author(s): Alsaif, M. A. & Robinson J. L.

Affiliation: Department of Pediatrics, King Abdulaziz Hospital, Al-Ahsa, King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Department of Pediatrics, University of Alberta, Edmonton, Canada.

Abstract:

Necrotizing fasciitis is a rare post-operative complication of Hirschsprung's disease. Very recently the only previous case of necrotizing fasciitis following a Soave procedure was reported with the etiologic agent being *Pseudomonas aeruginosa*. Here we are reporting the second case of necrotizing fasciitis following a Soave procedure caused by an extended spectrum beta lactamase harboring strain of *Escherichia coli* which is a rare pathogen in type II necrotizing fasciitis.

Journal: Journal of Pediatric Surgery Case Reports

Year of Publication: 2015

Publication issue: 3(4)

Page numbers: 174-175

SHORTLINK: bit.ly/1tdUbsR

Title: The origin variability of the iliolumbar artery and iatrogenic sciatica

Author(s): Al Talalwah, W., Al Dorazi, S. A. & Soames, R.

Affiliation: King Abdullah International Medical Research Center/King Saud bin Abdulaziz University for Health Sciences, College of Medicine, Riyadh, Saudi Arabia; Directorate of Prevention and Control of Healthcare Associated Infection, Saihat, Saudi Arabia; Science and Engineering, University of Dundee, UK.

Abstract:

The iliolumbar artery (ILA) is a standard branch from the posterior trunk of the internal iliac artery. It is the only pelvic artery ascending from pelvic cavity. Current study comprises 171 cadavers dissection to assess the origin variability of ILA. The present study identified the incidence of the ILA origin variability in Caucasian population which also clarified the iliolumbar variability in males and females. The current study shows that the ILA arises from the common iliac artery in 2 %, from the external iliac artery in 0.3 % and from the internal iliac artery in 13.8 % either from its dorsal or dorsomedial aspects in 1 and 12.8 %, respectively. The common, external and internal iliac arteries are defined as a high (early) origin and occurred in 16.1 %. The posterior trunk of the internal iliac artery is the most common origin of the ILA found to be in 77.9 %. Occasionally, it also arose from the superior gluteal artery (0.7 %) and the sciatic artery (0.3 %). Furthermore, the ILA arises from the anterior trunk indirectly as from the inferior gluteal artery in 0.3 %. The ILA arising from the superior or inferior gluteal artery or from the sciatic artery is defined as a low (delayed) origin and occurred in 1.3 %. In contrast, the ILA was 4.7 %. Consequently, variability of the ILA leads to vascular variability of the lumbosacral trunk of the sciatic nerve. Clinicians have to be aware of these variations to avoid unnecessary ligation to prevent sciatic neuropathy.

Journal: European Journal of Orthopaedic Surgery and Traumatology

Year of Publication: 2015

Publication issue: 25

Page numbers: 199-204

SHORTLINK: bit.ly/1PCWVmt

Title: Seizures Are Regulated by Ubiquitin-specific Peptidase 9 X-linked (USP9X), a De-Ubiquitinase

Author(s): Paemka, L., Mahajan, V. B. Ehaideb, S. N., Skeie, J. M., Tan, M. C., et al.

Affiliation: Department of Pediatrics, University of Iowa, USA; Department of Ophthalmology and Visual Sciences, The University of Iowa, USA; Department of Biology, The University of Iowa, USA; King Abdullah International Medical Research Center, King Abdulaziz Medical City, Riyadh, KSA; Department of Ophthalmology and Visual Sciences, University of Iowa, USA; Eskitis Institute for Drug Discovery, Griffith University, Australia; et al.

Abstract:

Epilepsy is a common disabling disease with complex, multifactorial genetic and environmental etiology. The small fraction of epilepsies subject to Mendelian inheritance offers key insight into epilepsy disease mechanisms; and pathologies brought on by mutations in a single gene can point the way to generalizable therapeutic strategies. Mutations in the PRICKLE genes can cause seizures in humans, zebrafish, mice, and flies, suggesting the seizure-suppression pathway is evolutionarily conserved. This pathway has never been targeted for novel anti-seizure treatments. Here, the mammalian PRICKLE-interactome was defined, identifying prickle-interacting proteins that localize to synapses and a novel interacting partner, USP9X, a substrate-specific de-ubiquitinase. PRICKLE and USP9X interact through their carboxy-termini; and USP9X de-ubiquitinates PRICKLE, protecting it from proteasomal degradation. In forebrain neurons of mice, USP9X deficiency reduced levels of Prickle2 protein. Genetic analysis suggests the same pathway regulates Prickle-mediated seizures. The seizure phenotype was suppressed in prickle mutant flies by the small-molecule USP9X inhibitor, Degrasyn/WP1130, or by reducing the dose of fat facets a USP9X orthologue. USP9X mutations were identified by resequencing a cohort of patients with epileptic encephalopathy, one patient harbored a de novo missense mutation and another a novel coding mutation. Both USP9X variants were outside the PRICKLE-interacting domain. These findings demonstrate that USP9X inhibition can suppress prickle-mediated seizure activity, and that USP9X variants may predispose to seizures. These studies point to a new target for anti-seizure therapy and illustrate the translational power of studying diseases in species across the evolutionary spectrum.

Journal: Plos Genetics

Year of Publication: 2015

Publication issue: 11(3)

Page numbers: -

SHORTLINK: bit.ly/24vlbbD

Title: The Clinical Significance of Ulnar Artery Morphology in Artificial Arterial-Venous Fistula for Hemodialysis

Author(s): Al Talalwah, W. B. & Getachew D. R.

Affiliation: Department of Basic Medical Sciences, King Abdullah International Medical Research Center/ King Saud bin Abdulaziz University for Health Sciences, Riyadh; Department of Anatomy, Hawassa University, Awassa, Ethiopia.

Abstract:

Background: The ulnar artery is a terminal branch of the brachial artery. The aim of this study is to provide comprehensive data concerning the morphology of the ulnar artery, with clinical implications for surgeons.

Methods: The current study includes the dissection of 68 upper limb specimens. It investigates the characteristics of the ulnar artery such as the internal diameter, external diameter, wall thickness, and distance of the ulnar artery origin.

Results: In this study, the ulnar artery arose distal to the superior margin of the head of the radius in 82.65% of cases. The angle degree of the ulnar artery with respect to the brachial artery ranges from to 8° to 30°. The internal and external diameters of the ulnar artery were found to decrease gradually from proximal to distal in both genders. The external and internal diameters of the ulnar artery are greater in males than in females. In all cases, the external and internal diameters and the thickness of the ulnar artery at three levels were found to be greater in the right ulnar artery than the left.

Conclusion: The right ulnar artery may be the appropriate choice for artificial arterial-venous fistula for haemodialysis. Due to its wide diameter, the proximal part of the radial artery is a suitable site for the artificial arterial-venous fistula immediately below the origin prior to its profound course. Therefore, it is an easy access for artificial arterial-venous fistula for surgeons. The radiologists must alert the surgeons for surgical modification in the case of high brachial bifurcation.

Journal: Malaysian Journal of Medical Science

Year of Publication: 2015

Publication issue: 22(3)

Page numbers: 41-47

SHORTLINK: bit.ly/1YciUCy

Title: Morphological feature of brachial artery and its clinical significance

Author(s): Al Talalwah, W., Getachew, D. & Soames, R.

Affiliation: King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; College of Medicine and Health Sciences, Hawassa University, Ethiopia; Centre for Anatomy and Human Identification, University of Dundee, UK.

Abstract:

Introduction: The present study is to provide comprehensive data concerning the morphology of brachial artery which has a clinical significance for clinicians, orthopedics, vascular surgeons and anatomists.

Materials and Methods: Routine dissections of the right and left upper limb of 34 adult cadavers (20 male and 14 female: mean age 78.9 year) were undertaken. It investigates the characteristics of the brachial artery such as the internal diameter, external diameter, wall thickness and distance of bifurcation of brachial artery.

Results: The mean of the external and internal diameters of the brachial artery from proximal to distal ranged from 6.87-5.35 mm respectively. The bifurcation of the brachial artery from the head of radius into its terminal branch radial and ulnar artery ranged from 13.49-13.79 mm, while the distance of bifurcation of common interosseous from origin of the ulnar artery ranged from 33.11-33.45 mm. The angle of bifurcation of the radial and ulnar arteries from the brachial artery ranged from 5.79-7.33° and 18.640-19.36° respectively. Due to variability of the brachial artery in the upper limb, the surgical and invasive procedures are performed in the region such as artificial arterial-venous fistula become more difficult and may result in iatrogenic injury.

Conclusion: Therefore, it is a clinical significant for surgeons to known the variable morphology and course of brachial artery to minimize surgical complication prior to operation.

Journal: Journal of Morphological Sciences

Year of Publication: 2015

Publication issue: 32(3)

Page numbers: 129-134

SHORTLINK: bit.ly/1XzHwpS

Title: Feasibility, safety, clinical, and laboratory effects of convalescent plasma therapy for patients with Middle East respiratory syndrome coronavirus infection: a study protocol

Author(s): Arabi, Y., Balkhy, H., Hajeer, A. H., Bouchama, A., Hayden, F. G. et al.

Affiliation: ¹⁻²King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Pathology and Laboratory Department, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Department of Medicine, University of Virginia School of Medicine, Charlottesville, VA, USA; Security Forces Hospital, Alfaisal University, Riyadh, Saudi Arabia; et al.

Abstract:

As of September 30, 2015, a total of 1589 laboratory-confirmed cases of infection with the Middle East respiratory syndrome coronavirus (MERS-CoV) have been reported to the World Health Organization (WHO). At present there is no effective specific therapy against MERS-CoV. The use of convalescent plasma (CP) has been suggested as a potential therapy based on existing evidence from other viral infections. We aim to study the feasibility of CP therapy as well as its safety and clinical and laboratory effects in critically ill patients with MERS-CoV infection. We will also examine the pharmacokinetics of the MERS-CoV antibody response and viral load over the course of MERS-CoV infection. This study will inform a future randomized controlled trial that will examine the efficacy of CP therapy for MERS-CoV infection. In the CP collection phase, potential donors will be tested by the enzyme linked immunosorbent assay (ELISA) and the indirect fluorescent antibody (IFA) techniques for the presence of anti-MERS-CoV antibodies. Subjects with anti-MERS-CoV IFA titer of $\geq 1:160$ and no clinical or laboratory evidence of MERS-CoV infection will be screened for eligibility for plasma donation according to standard donation criteria. In the CP therapy phase, 20 consecutive critically ill patients admitted to intensive care unit with laboratory-confirmed MERS-CoV infection will be enrolled and each will receive 2 units of CP. Post enrollment, patients will be followed for clinical and laboratory outcomes that include anti-MERS-CoV antibodies and viral load.

Journal: Springerplus

Year of Publication: 2015

Publication issue: 4(1)

Page numbers: 1-8

SHORTLINK: bit.ly/1ZtQt1e

Title: The distribution of Blastocystis subtypes in isolates from Qatar

Author(s): Abu-Madi, M., Aly, M., Behnke, J. M., Clark, C. G. & Balky, H.

Affiliation: Biomedical Research Center, Qatar University, Doha, Qatar; King Abdullah International Medical Research Center, Riyadh, KSA; School of Life Sciences, University of Nottingham, United Kingdom; London School of Hygiene and Tropical Medicine, London, United Kingdom; King Abdullah International Medical Research Center, Riyadh, KSA

Abstract:

BACKGROUND: Blastocystis is a common single-celled intestinal parasite of humans and other animals comprising at least 17 genetically distinct small subunit ribosomal RNA lineages (subtypes (STs), nine of which have been found in humans. The geographic distribution of Blastocystis subtypes is variable, but the subtypes present in Qatar are at present unknown.

METHODS: Stool samples were collected from randomly selected, apparently healthy subjects arriving in Qatar for the first time. Blastocystis subtypes were determined by sequencing of the small subunit rRNA gene (SSU rDNA) PCR products. Phylogenetic analyses were done using Maximum Composite Likelihood method.

RESULTS: 71.1 % of samples were positive for Blastocystis infection based on PCR-detection methodology compared to only 6.9 % by microscopy. Prevalence of Blastocystis did not differ between the sexes nor between age classes. However, there was a regional difference in prevalence with subjects arriving from Africa showing the highest (87.6 %), those from Western Asia intermediate (68.6 %) and from Eastern Asia the lowest prevalence (67.6 %). Genetic analysis detected only three STs. ST3 was the most common (69.3 %) and ST2 was the rarest (3.5 %), while ST1 had a prevalence of 27.2 %. ST2 showed a regional variation, being absent from the 64 Western Asian Blastocystis-positive subjects. Both ST1 and ST3 showed significant differences in prevalence between the sexes.

CONCLUSIONS: This is the first report exploring the distribution of Blastocystis subtypes in our region. We recommend that stool screening via microscopy for the presence of Blastocystis should be abandoned since it is extremely insensitive. In future, the prevalence of Blastocystis infections should be based on PCR methodology and we predict that in the years ahead diagnostic PCR will become the tool of choice. More work is needed to identify the full range of Blastocystis subtypes that circulate in our region.

Journal: Parasites and Vectors

Year of Publication: 2015

Publication issue: 8(1)

Page numbers: -

SHORTLINK: bit.ly/1TT33DF

Title: Treatment-Resistant Recurrent Membranoproliferative Glomerulonephritis in Renal Allograft Responding to Rituximab: Case Report

Author(s): Farooqui, M., Alsaad, K., Aloudah, N. & Alhamdan, H.

Affiliation: Division of Nephrology, King Abdulaziz Medical City, Riyadh, Saudi Arabia; Department of Pathology and Laboratory Medicine, King Abdullah International Medical Research Center; Department of Pathology and Laboratory Medicine, King Abdulaziz Medical City, Riyadh, Saudi Arabia.

Abstract:

We report a case of idiopathic membranoproliferative glomerulonephritis (MPGN) recurring 2 years after a living-unrelated kidney transplantation. The disease was refractory to intravenous immunoglobulin and plasmapheresis. Treatment with 2 doses of rituximab resulted in remission of the disease. The disease relapsed 18 months later after an episode of cytomegalovirus pneumonitis. After treatment of the pneumonitis, a lung biopsy was performed owing to persistent chest symptoms, which revealed bronchiolitis obliterans with organizing pneumonia. Bone marrow examination and culture revealed presence of acid-fast bacilli, and culture grew *Mycobacterium tuberculosis*. A repeated course of rituximab was withheld because of infection with tuberculosis, the patient's chest symptoms, and rare reports of noninfectious lung disease after the use of rituximab. The patient continues to have proteinuria with impaired kidney function.

Journal: Transplantation Proceedings

Year of Publication: 2015

Publication issue: 823-826

Page numbers: 47(3)

SHORTLINK: bit.ly/1ZtQDWx

Title: Emphysematous pyelonephritis: Is nephrectomy warranted?

Author(s): Alsharif, M., Mohammedkhalil, A., Alsayid, B., Alhazmy, A. & Lamy, S.

Affiliation: Research Promotion and Education Section, King Abdullah International Research Center, Urology Section, King Khalid National Guard Hospital, King Abdulaziz Medical City, Urology Section, College of Medicine, King Saud Bin Abdul-Aziz University for Health Sciences, Department of Urology, King Fahad General Hospital, Jeddah, Saudi Arabia.

Abstract:

Introduction: Emphysematous pyelonephritis (EPN) is associated with high mortality rate, up to 25%. There is still conflicting reports regarding the most appropriate management, conservative versus nephrectomy. Objective: To describe the outcome of patients with EPN.

Methods: We retrospectively reviewed the medical records of patients diagnosed with EPN by computed tomography from three tertiary institutes in Jeddah, Saudi Arabia. Type of management was classified as conservative and surgical. The conservative includes medical and minimally invasive procedures, such as percutaneous drainage and nephrostomy. The surgical which is nephrectomy. The outcome observed was preservation of the kidney function or patient's life.

Results: A total of 10 patients were included (9 females and 1 male), median age was 55 years and 63% were diabetic. The most common presentation was flank pain (100%), fever (75%), and vomiting (63%). The most common organism isolated was *Escherichia coli*. Nephrectomy was not associated with increased survival rate, while conservative management was associated with a good outcome, less morbidity (not dialysis-dependent).

Conclusion: Nephrectomy was not associated with high survival rate. Patients managed conservatively had a better overall performance and better survival. This study will add to other studies, which are encouraging conservative management.

Journal: Urology Annals

Year of Publication: 2015

Publication issue: 7(4)

Page numbers: 494-498

SHORTLINK: bit.ly/1UDfvK2

Title: Human Chorionic Villous Mesenchymal Stem Cells Modify the Functions of Human Dendritic Cells, and Induce an Anti-Inflammatory Phenotype in CD1+ Dendritic Cells

Author(s): Abomaray, F. M., Al Jumah, M. A., Kalionis, B., AlAskar, A. S., Al Harthy, S. et al.

Affiliation: King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Royal Women's Hospital, University of Melbourne, Australia; College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia; King Abdulaziz City for Science and Technology, Riyadh, Saudi Arabia; et al.

Abstract:

BACKGROUND: Mesenchymal stem cells derived from the chorionic villi of human term placenta (pMSCs) have drawn considerable interest because of their multipotent differentiation potential and their immunomodulatory capacity. These properties are the foundation for their clinical application in the fields of stem cell transplantation and regenerative medicine. Previously, we showed that pMSCs induce an anti-inflammatory phenotype in human macrophages. In this study, we determined whether pMSCs modify the differentiation and maturation of human monocytes into dendritic cells (DCs). The consequences on dendritic function and on T cell proliferation were also investigated.

METHODS: Interleukin-4 (IL-4) and granulocyte-macrophage colony stimulating factor (GM-CSF) were used to stimulate the differentiation of monocytes into immature dendritic cells (iDCs), which were subsequently co-cultured with pMSCs. Lipopolysaccharide (LPS) was used to induce maturation of iDCs into mature dendritic cells (mDCs). Flow cytometry and enzyme-linked immunosorbent assays (ELISA) were used to quantify the effect pMSC co-culturing on DC differentiation using CD1a, a distinctive marker of DCs, as well as other molecules important in the immune functions of DCs. The phagocytic activity of iDCs co-cultured with pMSCs, and the effects of iDCs and mDC stimulation on T cell proliferation, were also investigated.

RESULTS: Monocyte differentiation into iDCs was inhibited when co-cultured with pMSCs and maturation of iDCs by LPS treatment was also prevented in the presence of pMSCs as demonstrated by reduced expression of CD1a and CD83, respectively. The inhibitory effect of pMSCs on iDC differentiation was dose dependent. In addition, pMSC co-culture with iDCs and mDCs resulted in both phenotypic and functional changes as shown by reduced expression of costimulatory molecules (CD40, CD80, CD83 and CD86) and reduced capacity to stimulate CD4(+) T cell proliferation. In addition, pMSC co-culture increased the surface expression of major histocompatibility complex (MHC-II) molecules on iDCs but decreased MHC-II expression on mDCs. Moreover, pMSC co-culture with iDCs or mDCs increased the expression of immunosuppressive molecules [B7H3, B7H4, CD273, CD274 and indoleamine-pyrrole 2,3-dioxygenase (IDO)]. ...

Journal: Stem Cell Reviews and Reports

Year of Publication: 2015

Publication issue: 11(3)

Page numbers: 423-441

SHORTLINK: bit.ly/1Y5iMV9

Title: Awareness and predictors of female genital mutilation/cutting among young health advocates

Author(s): Abolfotouh, S. M., Ebrahim, A. Z. & Abolfotouh, M. A.

Affiliation: IFMSA-Egypt, Alexandria, Egypt; Oulu University Hospital, Oulu, Finland; Alexandria Faculty of Medicine, Alexandria, Egypt; King Abdullah International Medical Research Center, King Saud bin-Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia

Abstract:

The act of female genital mutilation/cutting (FGM/C) is considered internationally as a violent act against girls and women and a violation of their human rights. This study sought to assess the awareness and predictors of FGM/C in young Egyptian health advocates. A cross-sectional study of 600 medical students from a total of 2,500 members of the International Federation of Medical Students' Associations (IFMSA)-Egypt, across all Egyptian medical schools, was conducted using a previously validated online Google survey. The overall prevalence of circumcision was 14.7/100 female students, with a significantly higher prevalence in students from rural areas (25%) than in non-rural areas (10.8%, $P=0.001$), and in those residing in Upper (southern) Egypt (20.6%) than in Lower (northern) Egypt (8.7%, $P=0.003$). The students' mean percentage score for knowledge about the negative health consequences of FGM/C was 53.50 ± 29.07 , reflecting a modest level of knowledge; only 30.5% had a good level of knowledge. The mean percentage score for the overall attitude toward discontinuation of the practice of FGM/C was 76.29 ± 17.93 , reflecting a neutral attitude; 58.7% had a favorable attitude/norms toward discontinuation of the practice. Of circumcised students, approximately one-half (46.8%) were unwilling to have their daughters circumcised, and 60% reported no harm from being circumcised. After controlling for confounders, a negative attitude toward FGM/C was significantly ($P, 0.001$ in all cases) associated with male sex, residency in Upper Egypt, rural origin, previous circumcision, and the preclinical medical phase of education. The low level of knowledge among even future health professions in our study suggests that communication, rather than passive learning, is needed to convey the potentially negative consequences of FGM/C and to drive a change in attitude toward discontinuation of this harmful practice.

Journal: International Journal of Women's Health

Year of Publication: 2015

Publication issue: 7

Page numbers: 259-269

SHORTLINK: bit.ly/1t4quTA

Title: Insurance status and health-related quality-of-life disparities after trauma: results from a nationally representative survey in the US

Author(s): Alghnam, S., Schneider, E. B. & Castillo, R.C.

Affiliation: King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Johns Hopkins School of Medicine, Baltimore, USA; Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Baltimore, USA.

Abstract:

PURPOSE:

To determine whether insurance status modifies the association between injuries and health-related quality of life (HRQOL) in a nationally representative sample of US adults.

METHODS:

This is a longitudinal, observational study using the pooled 2000-2006 Medical Expenditure Panel Survey (MEPS). A total of 50,225 adults (age ≥ 18) with or without injuries were included in the study. HRQOL was evaluated using the EuroQoL Health Index (EQ-5D), visual analog scale (VAS), and the SF-12 physical component score (PCS) and mental component score (MCS). A categorical variable of injury-insurance combinations was created (not injured-privately insured, not injured-publically insured, not injured-uninsured, injured-privately insured, injured-publically insured, or injured-uninsured) and was included in the linear regression models. Adjustment covariates included age, gender, education, race, diabetes, hypertension, and baseline self-reported health. Healthcare utilization was also examined among the study population by injury status and across insurance groups.

RESULTS:

Seven hundred and ten individuals reported injuries. Adjusted analyses showed that injured individuals with public insurance had lower EQ-5D (-0.25), VAS (-11.4), PCS (-8.5), and MCS (-4.9) than the privately insured controls, while uninsured had EQ-5D, VAS, PCS and MCS that were, respectively, -0.12, -7.2, -2.6 and -4.1 relative to privately insured controls. With the exception of hospital discharges, healthcare utilization among uninsured individuals was lower than those with public or private insurance.

CONCLUSIONS:

We found injured individuals to have lower HRQOL than those without injuries, and this effect was exacerbated by insurance status. These findings call for interventions aimed to narrow the outcome disparity among injured in the US.

Journal: Quality of Life Research.

Year of Publication: 2015

Publication issue: -

Page numbers: -

SHORTLINK: bit.ly/1UbEipD

Title: Lipopolysaccharides-Induced Inflammatory Response in White Blood Cells Is Associated with Alterations in Senescence Mediators: Modulation by Metformin

Author(s): Aljada, A.

Affiliation: King Abdullah International Medical Research Center and King Saud bin Abdulaziz University for Health Sciences, Department of Basic Medical Sciences, National Guard Health Affairs, Riyadh, Saudi Arabia.

Abstract:

BACKGROUND: Sirtuin (SirT), a family of conserved histone deacetylases and transferases, has been proposed to function in inflammatory, cancer, and metabolic diseases. However, it is unclear how SirT modulates these processes. In this study, the effect of metformin on senescence and antisenescence mediators (SirT1-7, p53, and p16(INK4a)) mRNA expression in white blood cells (WBCs) following lipopolysaccharides (LPS)-induced inflammation in mice was examined.

MATERIAL AND METHODS: C57BL/6 mice were treated with metformin in their drinking water (2 mg/mL) for 1 week followed by intraperitoneal injection of LPS from *Escherichia coli* serotype 0111:B4 at 2 mg/kg. Blood was collected at the basal level and 1, 2, and 3 hr after LPS injection. SirT1-7, p53, and p16(INK4a) mRNA expression in WBCs was measured by real-time quantitative polymerase chain reaction (RT-qPCR).

RESULTS: SirT7 at 2 hr, SirT1 at 3 hr, and p16(INK4a) at 1 hr were inhibited significantly in WBCs following LPS injection. There were no significant changes in other SirT nor p53 mRNA expression in WBCs after LPS injection. Metformin inhibited SirT2 expression in WBCs significantly ($P < 0.05$) and did not induce any significant changes in other SirT forms and p53, whereas it induced p16(INK4a) mRNA expression in WBCs ($P < 0.05$) at the basal levels. Additionally, metformin treatment significantly inhibited SirT7, SirT1, and p16(INK4a) mRNA expression in WBCs at 1, 2, and 3 hr, whereas p53 was inhibited significantly at 2 hr after LPS injection.

CONCLUSIONS: SirT7 and SirT1 are stress responsive proteins that may mediate inflammation. The data suggest that metformin may exert its potential antisenescence and anti-inflammatory effects by targeting SirT7 and SirT1 pathways. SirT7 inhibition may allow the healing process and prevention of tissue damage by enabling cells to survive through inhibition of cytokines and inflammatory mediators under severe stress conditions.

Journal: Metabolic Syndrome and Related Disorders

Year of Publication: 2015

Publication issue: 13(6)

Page numbers: 278-285

SHORTLINK: bit.ly/22LIL5T

Title: Ectopic Bone Formation by Mesenchymal Stem Cells Derived from Human Term Placenta and the Decidua

Author(s): Kusuma, G. D., Menicanin, D., Gronthos, S., Manuelpillai, U., Abumaree, M. H., et al.

Affiliation: ^{1,4} Royal Women's Hospital, Victoria, Australia; ²⁻³ School of Medical Sciences, University of Adelaide, Adelaide, Australia; ⁵ King Abdullah International Medical Research Center/ King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Mesenchymal stem cells (MSCs) are one of the most attractive cell types for cell-based bone tissue repair applications. Fetal-derived MSCs and maternal-derived MSCs have been isolated from chorionic villi of human term placenta and the *decidua basalis* attached to the placenta following delivery, respectively. Chorionic-derived MSCs (CMSCs) and decidua-derived MSCs (DMSCs) generated in this study met the MSCs criteria set by International Society of Cellular Therapy. These criteria include: (i) adherence to plastic; (ii) >90% expression of CD73, CD105, CD90, CD146, CD44 and CD166 combined with <5% expression of CD45, CD19 and HLA-DR; and (iii) ability to differentiate into osteogenic, adipogenic, and chondrogenic lineages. *In vivo* subcutaneous implantation into SCID mice showed that both bromodeoxyuridine (BrdU)-labelled CMSCs and DMSCs when implanted together with hydroxyapatite/tricalcium phosphate particles were capable of forming ectopic bone at 8-weeks post-transplantation. Histological assessment showed expression of bone markers, osteopontin (OPN), osteocalcin (OCN), biglycan (BGN), bone sialoprotein (BSP), and also a marker of vasculature, alpha-smooth muscle actin (α -SMA). This study provides evidence to support CMSCs and DMSCs as cellular candidates with potent bone forming capacity.

Journal: Plos One

Year of Publication: 2015

Publication issue: 10(10)

Page numbers: -

SHORTLINK: bit.ly/1RW0XRd

Title: Mesenchymal stem cells reside in a vascular niche in the decidua basalis and are absent in remodelled spiral arterioles

Author(s): Kusuma, G. D., Manuelpillai, U., Abumaree, M. H., Pertile, M. D., Brennecke, S. P., et al.

Affiliation: University of Melbourne, Australia; Royal Women's Hospital, Victoria, Australia; Monash Institute of Medical Research, Monash University, Victoria, Australia; Prince Henry's Institute of Medical Research, Monash University, Australia; King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Royal Children's Hospital, Australia; et al.

Abstract:

INTRODUCTION:

Maternal decidua basalis tissue attached to the placenta following delivery is a source of decidual mesenchymal stem cells (DMSCs). The in vitro characteristics of DMSCs have been partly defined but their in vivo function(s) are poorly understood. The anatomic location, or niche, provides clues regarding potential in vivo function(s) of DMSCs, but the niche has not been described.

METHODS:

Cells were isolated from the decidua basalis and flow cytometric analyses showed the expected phenotypic profile for MSC cell surface markers. In vitro, the cells differentiated into adipocytes, osteocytes, and chondrocytes. DMSCs were then stained with antibodies by immunofluorescence detection.

RESULTS:

Immunocytochemistry revealed that DMSCs were positive for FZD-9, STRO-1, 3G5, and α -SMA as expected and lacked expression of vWF and Ck7. Fluorescence in situ hybridization analysis showed the cultured cells were of maternal origin. Immunofluorescence was carried out on placental bed biopsies using the FZD-9, STRO-1, 3G5, and α -SMA antibodies. DMSCs were located in the vascular niche in decidua basalis. Immunofluorescence with antibodies to FZD-9, Ck7 and vWF revealed DMSCs in the vascular niche surrounding intact non-transformed spiral arterioles but DMSCs were absent in fully transformed spiral arterioles.

DISCUSSION:

Spiral arteriole remodelling is a critical feature of human pregnancy. The DMSC niche was investigated in fully transformed and non-transformed spiral arterioles. DMSCs have not been previously implicated in spiral arteriole remodelling. The absence of DMSCs around fully transformed spiral arterioles suggests they are a target for replacement or destruction by invading placental extravillous trophoblast cells, which carry out spiral arteriole remodelling.

Journal: Placenta,

Year of Publication: 2015

Publication issue: 36(3)

Page numbers: 312-321

SHORTLINK: bit.ly/28h3XDr

Title: Heat stroke

Author(s): Leon, L. R. & Bouchama, A.

Affiliation: US Army Research Institute of Environmental Medicine, Natick, Massachusetts, USA; King Abdullah International Medical Research Center/King Saud bin Abdulaziz University for Health Sciences, Experimental Medicine Department-King Abdulaziz Medical City-Ministry of National Guard Health Affairs, Riyadh, Saudi Arabia.

Abstract:

Heat stroke is a life-threatening condition clinically diagnosed as a severe elevation in body temperature with central nervous system dysfunction that often includes combativeness, delirium, seizures, and coma. Classic heat stroke primarily occurs in immunocompromised individuals during annual heat waves. Exertional heat stroke is observed in young fit individuals performing strenuous physical activity in hot or temperature environments. Long-term consequences of heat stroke are thought to be due to a systemic inflammatory response syndrome. This article provides a comprehensive review of recent advances in the identification of risk factors that predispose to heat stroke, the role of endotoxin and cytokines in mediation of multi-organ damage, the incidence of hypothermia and fever during heat stroke recovery, clinical biomarkers of organ damage severity, and protective cooling strategies. Risk factors include environmental factors, medications, drug use, compromised health status, and genetic conditions. The role of endotoxin and cytokines is discussed in the framework of research conducted over 30 years ago that requires reassessment to more clearly identify the role of these factors in the systemic inflammatory response syndrome. We challenge the notion that hypothalamic damage is responsible for thermoregulatory disturbances during heat stroke recovery and highlight recent advances in our understanding of the regulated nature of these responses. The need for more sensitive clinical biomarkers of organ damage is examined. Conventional and emerging cooling methods are discussed with reference to protection against peripheral organ damage and selective brain cooling.

Journal: Comprehensive Physiology

Year of Publication: 2015

Publication issue: 5

Page numbers: 611-647

SHORTLINK: bit.ly/1UnnwQC

Title: Coevolution Analysis of HIV-1 Envelope Glycoprotein Complex

Author(s): Rawi, R., Kunji, K., Haoudi, A. & Bensmail, H.

Affiliation: Qatar Computing Research Institute, Hamad Bin Khalifa University, Doha, Qatar; Division of Genetics and Genomics, Boston Children's Hospital, Harvard Medical School, Boston, MA, USA; King Abdullah International Medical Research Center, King Abdulaziz Medical City, Riyadh, Saudi Arabia;

Abstract:

The HIV-1 Env spike is the main protein complex that facilitates HIV-1 entry into CD4⁺ host cells. HIV-1 entry is a multistep process that is not yet completely understood. This process involves several protein-protein interactions between HIV-1 Env and a variety of host cell receptors along with many conformational changes within the spike. HIV-1 Env developed due to high mutation rates and plasticity escape strategies from immense immune pressure and entry inhibitors. We applied a coevolution and residue-residue contact detecting method to identify coevolution patterns within HIV-1 Env protein sequences representing all group M subtypes. We identified 424 coevolving residue pairs within HIV-1 Env. The majority of predicted pairs are residue-residue contacts and are proximal in 3D structure. Furthermore, many of the detected pairs have functional implications due to contributions in either CD4 or coreceptor binding, or variable loop, gp120-gp41, and interdomain interactions. This study provides a new dimension of information in HIV research. The identified residue couplings may not only be important in assisting gp120 and gp41 coordinate structure prediction, but also in designing new and effective entry inhibitors that incorporate mutation patterns of HIV-1 Env.

Journal: Plos One

Year of Publication: 2015

Publication issue: 10(11)

Page numbers: -

SHORTLINK: bit.ly/1rb12KX

Title: Prevalence, consequences and predictors of low back pain among nurses in a tertiary care setting

Author(s): Abolfotouh, S. M., Mahmoud, K., Faraj, K., Moammer, G., ElSayed, A., et al.

Affiliation:¹⁻⁴ Hamad Medical Corporation, Doha, Qatar; King Abdullah International Medical Research Centre, Ministry of National Guard Health Affairs, King Saud bin-Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

PURPOSE: Nursing is a profession with high incidence and prevalence of low back pain (LBP), with its medical and professional consequences. These prevalence rates vary among countries, and with various measurements have been used to determine LBP. Individual and work-related factors are regarded as causal factors for many back injuries. The aims of study this were: (1) to estimate the prevalence of LBP using different measures, (2) to determine medical and professional consequences of LBP, and (3) to determine the associated factors and significant predictors of LBP.

METHODS: A cross-sectional study was conducted among 254 nurses from different departments/wards at Hamad General Hospital (HGH), Doha, Qatar over two months (February and March, 2015). A self-administered modified Nordic questionnaire was used to collect data regarding five different measures of LBP, its medical and occupational consequences and individual/lifestyle and work-related risk factors of LBP. Descriptive and analytic statistical analyses were done using chi-square and multivariate logistic regression techniques. Significance was considered at $p \leq 0.05$.

RESULTS: The findings of this study broadly confirm the high levels of back pain in nursing, with a one-year prevalence of LBP of 54.3 % for LBP of at least one day, 26.8 % for chronic LBP, 18.1 % for sick leave seeking LBP, and 34.3 % for medical treatment seeking LBP. Difficult or impossible activities of daily living were reported due to LBP in climbing stairs (50.7 %), walking (42.8 %), standing up (39.9 %), sleeping (33.3 %), getting out of bed (30.4 %) and wearing clothes (20.3 %). Work stop due to LBP was reported by 76.8 % of nurses, with 2.03 ± 3.09 days within the last year. Treatment was sought in 58.7 % by medical care, and 15.9 % by physiotherapy, while seeking rest days and/or sick leave was sought in 50.8 % of nurses with LBP. Sports practice ($p = 0.003$), office work ($p < 0.001$) and exposure to physical stress ($p = 0.002$) were the only significant predictors of LBP among nurses, when logistic regression analysis was conducted.

CONCLUSION: The prevalence of LBP among nurses at HGH is high and should be actively addressed, however, it was not a major cause of sick leave. Preventive measures should be taken to reduce the risk of lower back pain, such as arranging proper rest periods, educational programs to teach the proper use of body mechanics and sports activity programs.

Journal: International Orthopaedics

Year of Publication: 2015

Publication issue: 39(12)

Page numbers: 2439-2449

SHORTLINK: bit.ly/1suQ83W

Title: Ultra-Small Fatty Acid-Stabilized Magnetite Nanocolloids Synthesized by In Situ Hydrolytic Precipitation

Author(s): El-Boubbou, K., Al-Kaysi, R. O., Al-Muhanna, M. K., Bahhari, H. M., Al-Romaeh, A. I., et al.

Affiliation: King Saud bin Abdulaziz University for Health Sciences, King Abdulaziz Medical City, National Guard Health Affairs, Riyadh, Saudi Arabia; King Abdullah International Medical Research Center, Saudi Arabia; King Abdulaziz City for Science and Technology, Riyadh, Saudi Arabia

Abstract:

Simple, fast, large-scale, and cost-effective preparation of uniform controlled magnetic nanoparticles remains a major hurdle on the way towards magnetically targeted applications at realistic technical conditions. Herein, we present a unique one-pot approach that relies on simple basic hydrolytic *in situ* coprecipitation of inexpensive metal salts (Fe²⁺ and Fe³⁺) compartmentalized by stabilizing fatty acids and aided by the presence of alkylamines. The synthesis was performed at relatively low temperatures (80 °C) without the use of high-boiling point solvents and elevated temperatures. This method allowed for the production of ultra-small, colloidal, and hydrophobically stabilized magnetite metal oxide nanoparticles readily dispersed in organic solvents. The results reveal that the obtained magnetite nanoparticles exhibit narrow size distributions, good monodispersities, high saturation magnetizations, and excellent colloidal stabilities. When the [fatty acid]: [Fe] ratio was varied, control over nanoparticle diameters within the range of 2–10nm was achieved. The amount of fatty acid and alkylamine used during the reaction proved critical in governing morphology, dispersity, uniformity, and colloidal stability. Upon exchange with water-soluble polymers, the ultra-small sized particles become biologically relevant, with great promise for theranostic applications as imaging and magnetically targeted delivery vehicles.

Journal: Journal of Nanomaterials

Year of Publication: 2015

Publication issue:

Page numbers:

SHORTLINK: bit.ly/22LmrYJ

Title: Adipose Tissue Free Fatty Acid Storage In Vivo: Effects of Insulin Versus Niacin as a Control for Suppression of Lipolysis

Author(s): Ali, A. H., Mundi, M., Koutsari, C., Bernlohr, D. A. & Jensen, M. D.

Affiliation: ^{1,3} Diabetes, Metabolism, and Nutrition, Mayo Clinic, Rochester; King Abdullah International Medical Research Center, Ministry of National Guard Health Affairs, Riyadh, Saudi Arabia; Department of Biochemistry, Molecular Biology and Biophysics, University of Minnesota, Minneapolis; Division of Endocrinology, Diabetes, Metabolism, and Nutrition, Mayo Clinic, Rochester, MN.

Abstract:

Insulin stimulates the translocation fatty acid transport protein 1 (FATP1) to plasma membrane, and thus greater free fatty acid (FFA) uptake, in adipocyte cell models. Whether insulin stimulates greater FFA clearance into adipose tissue in vivo is unknown. We tested this hypothesis by comparing direct FFA storage in subcutaneous adipose tissue during insulin versus niacin-mediated suppression of lipolysis. We measured direct FFA storage in abdominal and femoral subcutaneous fat in 10 and 11 adults, respectively, during euglycemic hyperinsulinemia or after oral niacin to suppress FFA compared with 11 saline control experiments. Direct palmitate storage was assessed using a [U-(13)C]palmitate infusion to measure palmitate kinetics and an intravenous palmitate radiotracer bolus/timed biopsy. Plasma palmitate concentrations and flux were suppressed to 23 ± 3 and 26 ± 5 $\mu\text{mol L}^{-1}$ ($P = 0.91$) and 44 ± 4 and 39 ± 5 $\mu\text{mol min}^{-1}$ ($P = 0.41$) in the insulin and niacin groups, respectively, much less ($P < 0.001$) than the saline control group (102 ± 8 and 104 ± 12 $\mu\text{mol min}^{-1}$, respectively). In the insulin, niacin, and saline groups, abdominal palmitate storage rates were 0.25 ± 0.05 vs. 0.25 ± 0.07 vs. 0.32 ± 0.05 $\mu\text{mol kg adipose lipid}^{-1} \text{ min}^{-1}$, respectively ($P = \text{NS}$), and femoral adipose storage rates were 0.19 ± 0.06 vs. 0.20 ± 0.05 vs. 0.31 ± 0.05 $\mu\text{mol kg adipose lipid}^{-1} \text{ min}^{-1}$, respectively ($P = \text{NS}$). In conclusion, insulin does not increase FFA storage in adipose tissue compared with niacin, which suppresses lipolysis via a different pathway.

Journal: Diabetes

Year of Publication: 2015

Publication issue: 64(8)

Page numbers: 2828-2835

SHORTLINK: bit.ly/1PCZzsk

Title: Pattern of Drug Overdose and Chemical Poisoning Among Patients Attending an Emergency Department, Western Saudi Arabia

Author(s): Bakhaidar, M., Jan, S. Farahat, F., Attar, A. Alsawid, B. et al.

Affiliation: Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia; College of Medicine, Taibah University, Madinah, Saudi Arabia; King Abdulaziz Medical City, King Saud bin AbdulAziz University for Health Sciences, King Abdullah International Medical Research Center, Jeddah, Saudi Arabia; et al.

Abstract:

Poisoning is a medical emergency that represent a major health problem all over the world. Studies on drug overdose and chemical poisoning are very limited in Saudi Arabia (SA). We aimed to describe the current pattern and assess risk factors of drug overdose and chemical poisoning in King Khalid National Guard hospital, Jeddah, SA. Medical records of patients attended emergency department in King Khalid National Guard hospital during the period from January 2008 to December 2012 due to drug overdose and chemical poisoning were reviewed. A total of 129 cases were included in the study. The majority of the population was Saudi (97.7 %), and almost half of them were females (54.3 %). Children under 12 years were the most affected age group (44.2 %). Drug overdose was the most common cause of poisoning (92.2 %). Analgesics and non-steroidal anti-inflammatory drugs represented the highest percentage of used medications (20.4 %). The most commonly reported symptoms were symptoms of the central nervous system (57.4 %) followed by GIT symptoms (41.9 %). Intentional poisoning was reported in 34 cases (26.4 %). Female patients were significantly more likely to attempt suicide than male patients (OR = 7.22, 95 % CI = 1.70, 30.62). Children continue to be at high risk for medication and chemical poisoning. Accessibility to medications at homes encountered for most of poisoning cases among children. Implementing methods to raise public awareness and minimize children access to medications would significantly contribute to reducing burden of this problem on the community.

Journal: Journal of Community Health

Year of Publication: 2015

Publication issue: 40(1)

Page numbers: 57-61

SHORTLINK: bit.ly/1PCZ010

Title: Functional clinical outcomes in multiple sclerosis: Current status and future prospects

Author(s): Karabudak, R., Dahdaleh, M., Aljumah, M., Alroughani, R., Alsharoqi, I. A., et al.

Affiliation: Neuroimmunology Unit, Ankara, Turkey; Arab Medical Center and Khalidi Hospital, Amman, Jordan; King Abdullah International Medical Research Center, King Saud Ben Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Amiri Hospital, Kuwait; Dasman Diabetes Institute, Kuwait; Clinical Neurosciences Department, Manama, Bahrain; et al.

Abstract:

For decades, the Expanded Disability Status Scale (EDSS) has been the principal measure of disability in clinical trials in patients with multiple sclerosis (MS) and in clinical practice. However, this test is dominated by effects on ambulation. Composite endpoints may provide a more sensitive measure of MS-related disability through the measurement of additional neurological functions. The MS Functional Composite (MSFC) includes a walking test (25-ft walk) plus tests of upper extremity dexterity (9-hole peg test) and cognitive function (Paced Auditory serial Addition test [PASAT]). Replacing PASAT with the Symbol Digit Modality test, a more sensitive test preferred by patients, may improve the clinical utility of the MSFC. In addition, disease-specific measures of QoL may be used alongside the MSFC (which does not include measurement of QoL). Clinical data suggest that disease-modifying therapies may delay or prevent relapse, and better composite measures will be valuable in the assessment of disease activity-free status in people with MS.

Journal: Multiple Sclerosis and Related Disorders

Year of Publication: 2015

Publication issue: 4(3)

Page numbers: 192-201

SHORTLINK: bit.ly/1Pfc6b2

Title: Health-related quality of life in patients with sickle cell disease in Saudi Arabia

Author(s): Ahmed, A. E., Alaskar, A. S., Al-Suliman, A. M., Jazieh, A., McClish, D. K., et al.

Affiliation: King Saud bin Abdulaziz University for Health Sciences, Riyadh, KSA; King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; King Fahad Hospital, Hofuf, Saudi Arabia; King Abdulaziz Medical City, Riyadh, Saudi Arabia; Virginia Commonwealth University, Richmond, VA USA; King Fahad Central Hospital, Jazan, Saudi Arabia; et al.

Abstract:

Background: There is a lack of research concerning health-related quality of life (HRQoL) in Saudi patients with sickle cell disease (SCD), particularly among adult populations. The aim of the current study was to describe the characteristics of SCD patients and their impact on their quality of life (QoL).

Methods: Six hundred twenty-nine adult SCD patients who attended King Fahad Hospital in Hofuf and King Fahad Central Hospital in Jazan were included in the analysis. Demographic/clinical data were collected and an Arabic version of the Medical Outcomes 36-Item Short-Form Health Survey (SF-36) questionnaire was used to assess QoL.

Results: SCD patients who hold a university degree reported positive impacts on the following domains of SF-36: physical role function, vitality, emotional well being, social function, pain reduction, and general health ($P = .002$, $P = .001$, $P = .001$, $P = .003$, $P = .004$, and $P = .001$, respectively). In general, patients with fever, skin redness, swelling, or history of blood transfusion tended to impair the health status of the SF-36. A multivariate analysis revealed that patients with a university degree tended to report high scores of physical role functions, emotional role function, and vitality. Patients with regular exercise tend to increase vitality, social function, general health, and reduce pain. Unemployment tends to lessen vitality and worsen pain. On average, pain, social function, and physical function scores tended to worsen in patients with swelling or history of blood transfusion.

Conclusions: This study highlighted that poor education, fever, skin redness, and swelling were negatively associated with specific components of SF-36. SCD patients with a history of blood transfusion found their QoL poorer, whereas regular exercise tended to improve QoL.

Journal: Health and Quality of Life Outcomes

Year of Publication: 2015

Publication issue: 13

Page numbers:

SHORTLINK: bit.ly/1tdW6Ha

Title: Effect of Ramadan fasting in Saudi Arabia on serum bone profile and immunoglobulins

Author(s): Bahijri, S. M., Ajabnoor, G. M., Borai, A., Al-Aama, J. Y. & Chrousos, G. P.

Affiliation: Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia; King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; King Fahd Medical Research Center, King Abdulaziz University, Jeddah, Saudi Arabia; University of Athens Medical School, Athens, Greece.

Abstract:

Background: Each year Muslims fast from dawn to sunset for 1 month (Ramadan). In Saudi Arabia, the sleep-wake cycle during Ramadan is severely disturbed and is associated with abolition of the circadian cortisol rhythm, exposing Saudis to continuously increased cortisol levels, which may influence the immune response. In addition to cortisol, sleep and fasting affect the secretion of parathyroid hormone (PTH) and hence bone metabolism.

Methods: Our objective was to investigate the effect of Ramadan type fasting on secretory patterns of PTH, markers of bone metabolism, and serum immunoglobulins. Blood samples from healthy young volunteers were collected at 9 a.m. and 9 p.m. (1 hour) before (Shaban) and 2 weeks into Ramadan. Calcium, phosphorus, magnesium, albumin, alkaline phosphatase, 25-OH vitamin D, intact PTH (iPTH), and immunoglobulin (Ig) A, M and G were measured.

Results: During Ramadan, evening-adjusted calcium was higher ($p = 0.036$) and phosphate lower ($p < 0.001$) than the corresponding morning value. Moreover, the Ramadan mean morning phosphate was higher and the evening level lower was than Shabaan values ($p = 0.010$ and $p < 0.001$, respectively), while mean iPTH level was decreased compared with the morning value ($p = 0.001$), and the evening mean during Shabaan ($p = 0.029$). Mean IgG concentration was significantly lower during Ramadan ($p = 0.003$ and $p = 0.021$ for morning and evening, respectively).

Conclusions: Changes in dietary practices during Ramadan modulated PTH secretion to a pattern which might be beneficial to bone health. Combined effects of fasting and disturbed sleep led to a noted decrease in IgG level. Therefore, a possible beneficial effect of fasting on bone turnover is combined with decreased immune response.

Journal: Therapeutic Advances in Endocrinology and Metabolism

Year of Publication: 2015

Publication issue: 6(5)

Page numbers: 223-232

SHORTLINK: bit.ly/22Lnisu

Title: Fostering a supportive moral climate for health care providers: Toward cultural safety and equity

Author(s): Almutairi, A. F.

Affiliation: King Abdullah International Medical Research Centre, Riyadh, Saudi Arabia; School of Nursing, University of British Columbia, Canada.

Abstract:

In Western forms of health care delivery around the globe, research tells us that nurses experience workloads as they face increasingly complex needs in the populations they serve, professional conflicts, and alienation from leadership in healthcare bureaucracies. These problems are practical and ethical as well as cultural. Cultural conflicts can arise when healthcare providers and the populations they serve come from diverse economic, ethnic, and cultural backgrounds. The purpose in this paper is to draw from Almutairi's research with health care teams in Saudi Arabia to show the complexity of culturally and morally laden interactions between health care providers and patients and their families. Then, I will argue for interventions that promote social justice and cultural safety for nurses, other health care providers, and the individuals, families, and communities they serve. This will include addressing international implications for nursing practice, leadership, policy and research.

Journal: Nursing Plus Open

Year of Publication: 2015

Publication issue: 1

Page numbers: 1-4

SHORTLINK: bit.ly/22Lnps

Title: Chi8: A GPU program for detecting significant interacting SNPs with the Chi-square 8-df test

Author(s): Al-Jouie, A., Esfandiari, M., Ramakrishnan, S. & Roshan, U.

Affiliation: King Abdullah International Medical Research Center, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Department of Computer Science, New Jersey Institute of Technology, University Heights, Newark, USA; Cold Spring Harbor Laboratory, NY, USA.

Abstract:

Background: Determining interacting SNPs in genome-wide association studies is computationally expensive yet of considerable interest in genomics.

Findings: We present a program Chi8 that calculates the Chi-square 8 degree of freedom test between all pairs of SNPs in a brute force manner on a Graphics Processing Unit. We analyze each of the seven WTCCC genome-wide association studies that have about 5000 total case and controls and 400,000 SNPs in an average of 9.6 h on a single GPU. We also study the power, false positives, and area under curve of our program on simulated data and provide a comparison to the GBOOST program.

Journal: BMC Research Notes

Year of Publication: 2015

Publication issue: 8(1)

Page numbers: -

SHORTLINK: bit.ly/1RW0Q85

Title: Permissive Underfeeding or Standard Enteral Feeding in Critically Ill Adults

Author(s): Arabi, Y. M., Aldawood, A. S., Haddad, S. H., Al-Dorzi, H. M., Tamin, H. M., et al.

Affiliation: ¹⁻⁵ King Saud bin Abdulaziz University for Health Sciences and King Abdullah International Medical Research Center; et al.

Abstract:

BACKGROUND The appropriate caloric goal for critically ill adults is unclear. We evaluated the effect of restriction of nonprotein calories (permissive underfeeding), as compared with standard enteral feeding, on 90-day mortality among critically ill adults, with maintenance of the full recommended amount of protein in both groups. **METHODS** At seven centers, we randomly assigned 894 critically ill adults with a medical, surgical, or trauma admission category to permissive underfeeding (40 to 60% of calculated caloric requirements) or standard enteral feeding (70 to 100%) for up to 14 days while maintaining a similar protein intake in the two groups. The primary outcome was 90-day mortality. **RESULTS** Baseline characteristics were similar in the two groups; 96.8% of the patients were receiving mechanical ventilation. During the intervention period, the permissive underfeeding group received fewer mean (\pm SD) calories than did the standard feeding group (835 ± 297 kcal per day vs. 1299 ± 467 kcal per day, P...

Journal: New England Journal of Medicine

Year of Publication: 2015

Publication issue: 372(25)

Page numbers: 2398-2408

SHORTLINK: bit.ly/1UvZjak

Title: Prevalence of celiac disease among symptom-free children from the Eastern Province of Saudi Arabia

Author(s): Al Hatlani, M. M.

Affiliation: Department of Pediatrics, Ministry of National Guard, King Abdullah International Medical Research Center, King Abdullah Specialized Children Hospital, Riyadh, Saudi Arabia

Abstract:

Background/Aim: Epidemiological studies of celiac disease (CD) among Saudi children have been performed only within some groups who are at a high risk of developing CD. The aim of this study was to determine the prevalence of CD among symptom-free children from the public schools of the military campus of National Guard in the Eastern Province of Saudi Arabia.

Patients and Methods: Between 2012 and 2014, serum samples were collected from 1141 students (age 6–18 years) attending nine public schools of the military campus of National Guard in the Eastern Province of Saudi Arabia. Participants were screened for CD by testing for anti-tissue transglutaminase IgA (IgA-tTG) and IgG antibodies (IgG-tTG). Small intestinal biopsy was offered to all participants who tested positive for IgA-tTG [IgA-tTG >20 relative units (RU)/ml].

Results: Of the 1141 participants, 32 were IgA-tTG positive. Thus, the estimated serology-positive prevalence was 3%. An intestinal biopsy was performed in 10 of the participants with antibody positivity. The biopsy findings of all 10 children were consistent with CD. Thus, the estimated biopsy-confirmed prevalence was about 1%.

Conclusions: The prevalence of CD was estimated to be about 1% among symptom-free children from the public schools of the military campus of National Guard in the Eastern Province of Saudi Arabia.

Journal: Journal of Gastroenterology

Year of Publication: 2015

Publication issue: 21(6)

Page numbers: 367-371

SHORTLINK: bit.ly/25JbWar

Title: The medial circumflex femoral artery origin variability and its radiological and surgical intervention significance

Author(s): Al-Talalwah, W.

Affiliation: Medicine, King Abdullah International Medical Research Center / King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

The medial circumflex femoral artery usually arises from the deep femoral artery. It supplies the adductors and hamstring group as well as sciatic nerve and femoral head and neck through anastomosis. In current study includes 342 dissected hemipelvis to clarify the origin of medial circumflex femoral artery. The medial circumflex femoral artery arose from the common and deep femoral artery in 39.3% and 57%. Infrequently, it arose from the superficial femoral artery in 2.5% whereas it arose from the lateral circumflex femoral artery in 0.6%. In contrast, it found to be congenital absent in 0.6%. In current study, the usual origin level of medial circumflex femoral artery found to be proximal to lateral circumflex femoral artery in 52% and distal to the deep femoral artery in 57.3%. Knowing the medial circumflex femoral artery limits avascular necrosis of the femoral head such as embolization procedure. Therefore, knowing the origin variability of the medial circumflex femoral artery may lead to avoid iatrogenic fault in several procedures such as arterial bypass procedure to protect vascular supply of lower limb. Radiologists as well as orthopedics and vascular surgeons have to be aware of the medial circumflex femoral artery variation.

Journal: Springerplus

Year of Publication: 2015

Publication issue: 4

Page numbers: -

SHORTLINK: bit.ly/1WCUIJR

Title: The Vascular Supply of Hip Joint and its Clinical Significance

Author(s): Al-Talalwah, W.

Affiliation: King Abdullah International Medical Research Center, King Saud bin Abdulaziz University for Health Sciences, College of Medicine, Department of Basic Medical Sciences, Riyadh, Saudi Arabia.

Abstract:

The hip joint gains its vascular supply from the superior gluteal arteries as well as from the medial and lateral circumflex femoral arteries with the first perforating artery. In gluteal trauma, the superior and inferior gluteal artery may be affected which may end with vascular insult of hip joint. The current study includes a dissection of 171 cadavers to examine the vascular supply of hip joint. In 99.3% of articular branch arises from the superior gluteal artery either directly or indirectly (95.4% or in 3.9%, respectively). In 81% of articular branch arises from the inferior gluteal artery either directly or indirectly in 78% or in 3%. In 20.3% of articular branch arises from the coexistence of sciatic artery either directly or indirectly (17.7% or in 2.6%, respectively). Infrequently, the internal pudendal artery gives articular branch in 0.4%. Further, there is no difference between male and female in hip joint supply in current study. Based on current study's result, the dominant articular branch of vascular supply of the hip joint comes from the superior gluteal artery whereas the inferior gluteal artery comes beyond due its congenital absence. The coexistence sciatic artery is a replacement artery for superior or inferior gluteal artery in case of congenital absence. Due to aneurysm of the three previous arteries after trauma, it is important to study their course and articular branches to avoid iatrogenic fault of joint vascular insult during surgical management of either true or false aneurysm.

Journal: International Journal of Morphology

Year of Publication: 2015

Publication issue: 33(1)

Page numbers: 62-67

SHORTLINK: bit.ly/1XzMKSx

Title: Biological Activities and Chemical Composition of Methanolic Extracts of Selected Autochthonous Microalgae Strains from the Red Sea

Author(s): Pereira, H., Custodio, L., Roderuques, M. J., de Sousa, C. B. ... Abu-Salem, K. M., et al.

Affiliation: ¹⁻⁴ Centre of Marine Sciences, University of Algarve, Portugal; King Abdullah International Medical Research Center, King Abdulaziz Medical City, Riyadh, Saudi Arabia; et al.

Abstract:

Four lipid-rich microalgal species from the Red Sea belonging to three different genera (Nannochloris, Picochlorum and Desmochloris), previously isolated as novel biodiesel feedstocks, were bioprospected for high-value, bioactive molecules. Methanol extracts were thus prepared from freeze-dried biomass and screened for different biological activities. Nannochloris sp. SBL1 and Desmochloris sp. SBL3 had the highest radical scavenging activity against 1,1-diphenyl-2-picrylhydrazyl, and the best copper and iron chelating activities. All species had potent butyrylcholinesterase inhibitory activity (>50%) and mildly inhibited tyrosinase. Picochlorum sp. SBL2 and Nannochloris sp. SBL4 extracts significantly reduced the viability of tumoral (HepG2 and HeLa) cells with lower toxicity against the non-tumoral murine stromal (S17) cells. Nannochloris sp. SBL1 significantly reduced the viability of Leishmania infantum down to 62% (250 µg/mL). Picochlorum sp. SBL2 had the highest total phenolic content, the major phenolic compounds identified being salicylic, coumaric and gallic acids. Neoxanthin, violaxanthin, zeaxanthin, lutein and β-carotene were identified in the extracts of all strains, while canthaxanthin was only identified in Picochlorum sp. SBL2. Taken together, these results strongly suggest that the microalgae included in this work could be used as sources of added-value products that could be used to upgrade the final biomass value.

Journal: Marine Drugs

Year of Publication: 2015

Publication issue: 13(6)

Page numbers: 3531-3549

SHORTLINK: bit.ly/1UvZHWB

Title: Prevalence and predictors of antibiotic prescription errors in an emergency department, Central Saudi Arabia

Author(s): Alanazi, M. Q., Al-Jeraisy, M. I. & Salam, M.

Affiliation: Drug Policy and Economic Center; King Abdullah International Medical Research Center; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Background: Inappropriate antibiotic (ATB) prescriptions are a threat to patients, leading to adverse drug reactions, bacterial resistance, and subsequently, elevated hospital costs. Our aim was to evaluate ATB prescriptions in an emergency department of a tertiary care facility.

Methods: A cross-sectional study was conducted by reviewing charts of patients complaining of infections. Patient characteristics (age, sex, weight, allergy, infection type) and prescription characteristics (class, dose, frequency, and duration) were evaluated for appropriateness based on the *AHFS Drug Information* and the *Drug Information Handbook*. Descriptive and analytic statistics were applied.

Results: Sample with equal sex distribution constituted of 5,752 cases: adults (≥ 15 years) =61% and pediatrics (<15 years) =39%. Around 55% complained of respiratory tract infections, 25% urinary tract infections (UTIs), and 20% others. Broad-spectrum coverage ATBs were prescribed for 76% of the cases. Before the prescription, 82% of pediatrics had their weight taken, while 18% had their weight estimated. Allergy checking was done in 8% only. Prevalence of inappropriate ATB prescriptions with at least one type of error was 46.2% (pediatrics =58% and adults =39%). Errors were in ATB selection (2%), dosage (22%), frequency (4%), and duration (29%). Dosage and duration errors were significantly predominant among pediatrics ($P=0.001$ and $P,0.0001$, respectively). Selection error was higher among adults ($P=0.001$). Age stratification and binary logistic regression were applied. Significant predictors of inappropriate prescriptions were associated with: 1) cephalosporin prescriptions (adults: $P,0.001$, adjusted odds ratio [adj OR] =3.31) (pediatrics: $P,0.001$, adj OR =4.12) compared to penicillin; 2) UTIs (adults: $P,0.001$, adj OR =2.78) (pediatrics: $P=0.039$, adj OR =0.73) compared to respiratory tract infections; 3) obtaining weight for pediatrics before the prescription of ATB ($P,0.001$, adj OR =1.83) compared to those whose weight was estimated; and 4) broad-spectrum ATBs in adults ($P=0.002$, adj OR =0.67).

Conclusion: Prevalence of ATB prescription errors in this emergency department was generally high and was particularly common with cephalosporin, narrow-spectrum ATBs, and UTI infections.

Journal: Drug, Healthcare and Patient Safety

Year of Publication: 2015

Publication issue: 7

Page numbers: 103-111

SHORTLINK: bit.ly/1tdYk9t

Title: Characterization of Celecoxib-Loaded Solid Lipid Nanoparticles Formulated with Tristearin and Softisan 100

Author(s): Fouad, E. A., Yassin, A. E. B. & Alajami, H. N.

Affiliation: Almaarefa Colleges for Science and Technology, Riyadh, Saudi Arabia; College of Pharmacy, King Saud bin Abdulaziz University for Health Sciences, and King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia.

Abstract:

Purpose: To prepare solid lipid nanoparticles employing softisan 100 (SOFTI) or tristearin (TS) as solid lipid carriers for celecoxib (CXB) to overcome its dissolution challenge.

Methods: The solid lipid nanoparticles (SLN) of CXB were prepared by ultrasonic melt-emulsification technique. SLN was characterized using differential scanning calorimetry (DSC), Fourier transform infra spectroscopy (FTIR), as well as for entrapment efficiency, particle size, zeta potential and CXB release.

Results: The SLN formulations exhibited high CXB entrapment efficiency (91.6 % for SOFTI and 94.6 % for TS) while mean particle size was 181.0 ± 4.6 and 346.3 ± 3.8 nm for SOFTI and TS, respectively. The DSC thermograms showed the disappearance of CXB peak due to its molecular distribution in the lipid nanoparticles while FTIR spectra revealed physical interaction of CXB with the tested lipids. The tendency of SOFTI to liberate CXB in 24 h was higher than that of TS (55.5 ± 1.07 vs 49.2 ± 2.94 %, $p < 0.05$). Drug release was by non-Fickian mechanism.

Conclusion: Formulation of CXB in SLN using TS or SOFTI produces sustained drug release delivery that can overcome the dissolution limitation of the drug and thus, improve its therapeutic efficacy.

Journal: Tropical Journal of Pharmaceutical Research

Year of Publication: 2015

Publication issue: 205-210

Page numbers: 14(2)

SHORTLINK: bit.ly/214T5TJ

Title: Wire-guided Cannulation Versus Contrast-guided Cannulation In Pediatric Endoscopic Retrograde Cholangiopancreatography

Author(s): Al Hatlani, M., Kortan, P., May, G., Ling, S. C., Walters, T., et al.

Affiliation: Division of Gastroenterology, Hepatology and Nutrition, Department of Paediatrics, The Hospital for Sick Children, University of Toronto, Canada; Department of Pediatrics and King Abdullah International Medical Research Center, King Abdulaziz Medical City, Ministry of National Guard, Riyadh, Saudi Arabia; et al.

Abstract:

BACKGROUND/AIM: Wire-guided cannulation (WGC) of the common bile duct may be associated with fewer complications and higher success rate compared with contrast-guided cannulation (CGC) in adults. Data in children are lacking. The aim of this study was to compare the successful cannulation and complication rate of WGC and CGC in pediatric endoscopic retrograde cholangiopancreatography (ERCP).

PATIENTS AND METHODS: We report a retrospective cohort study comparing WGC to CGC in a pediatric cohort. We reviewed the medical records of 167 children who underwent ERCP over a 10-year time period (CGC, 1999-2003, WGC, 2003-2009). Indications, findings, and success were analyzed.

RESULTS: A total of 93 patients (56%) underwent WGC and 74 (44%) CGC. Children in the WGC group were younger (9.5 ± 4.7 vs. 11.5 ± 4.6 years in CGC; $P = 0.006$) and underwent more therapeutic ERCP interventions (70% vs. 40% in CGC), whereas diagnostic ERCP was more common in the CGC group (60%; $P < 0.005$). The overall success (96%) and complication rate (8%) were identical in both groups but a trend toward a reduction in the complication rate over time was noted in the WGC group. Post-ERCP pancreatitis (PEP) was documented in one patient in the WGC group (1.1%) and three patients (4.2%) in the CGC group (P-NS).

CONCLUSION: The success and complication rate in both CGC and WGC are comparable in children but considering the patient and procedure complexity and the trend toward lower PEP in the WGC group, WGC may be the preferable cannulation technique for ERCP in children.

Journal: Saudi Journal of Gastroenterology

Year of Publication: 2015

Publication issue: 21(1)

Page numbers: 25-29

SHORTLINK: bit.ly/1X8mcHo

Title: Unusual rotavirus genotypes among children with acute diarrhea in Saudi Arabia

Author(s): Aly, M., Al Khairy, A., Johani, S. & Balkhy, H.

Affiliation: King Abdullah International Medical Research Centre; King Saud bin Abdulaziz University for Health Sciences; Department of Microbiology, King Abdulaziz Medical City; Department of Infection Prevention and Control, King Abdulaziz Medical City.

Abstract:

Background: Human rotavirus A (human RV-A) is the most common cause of viral gastroenteritis in infants. The objective of the study was to characterize the G and P genotypes among clinical rotavirus isolates from children with acute diarrhea admitted to a tertiary care hospital in Riyadh, Saudi Arabia. Methods: From 2011 to 2012, 541 pediatric patients with acute diarrhea were tested for rotavirus infection. RNA extractions from the fecal specimens were done by commercial kit. RT-PCR and sequencing techniques were used to detect the prevalent genotypes. Phylogenetic analysis by Maximum Likelihood method was used to study the clustering of the circulating genotypes. Results: The data showed that 171/541 (31.6%) faecal samples were positive for human RVA and majority were children aged below 2 years. From the G and P [types] detected it was seen that (a) 171 minus 43 ie. 128 rotavirus positives were G typed successfully (b) 171 minus 20 ie. 151 rotavirus positives were P typed successfully; (c) overall G [P] nature was determined for 113 rotavirus positives out of 171. VP4 genotyping showed that majority of the positives 146/151 (96.7%) were P [8]; 4/151 (2.6%) were P [4]; 1/151 (0.66%) was P [6]. The dominant strains included G1P [8] 70/113 (61.9%); G9P [8] 19/113 (16.8%); G12P [8] 7/113 (6.2%) and G3P [8] 5/113 (4.4%) while the uncommon strains detected from Saudi Arabia during the study were G1P [4] 1/113 (0.88%) and G12P [6] 1/113 (0.88%). Phylogenetic tree, based on VP4/VP7 sequence analysis, revealed that G1P [8] was distinctly related to homologous strains included in human RV-A vaccine strains. Nevertheless, the uncommon genotypes G1P [4] and G12P [6] were clustered with isolates from other countries such as Bangladesh, China, Japan, Thailand and Philippines. Conclusions: More studies will be required to further focus on newly emerging genotypes in our region together with the seasonality of rotavirus infection in the region, especially after January 2013 when the rotavirus vaccination has become part of routine childhood immunizations.

Journal: BMC Infectious Diseases 1

Year of Publication: 2015

Publication issue: 5

Page numbers: -

SHORTLINK: bit.ly/1UbHyS5

Title: Time for an Adolescent Health Surveillance System in Saudi Arabia: Findings From "Jeeluna"

Author(s): AlBuhairan, F. S., Tamim, H. Al Abuyee, M. A., AkDukair, S. Al Shehri, S., et al.

Affiliation: ^{1,3} King Abdullah Specialized Children's Hospital, King Abdulaziz Medical City, Riyadh, Saudi Arabia; ^{1-3,4-5} King Abdullah International Medical Research Center and King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Ministry of Education, Riyadh, Saudi Arabia; et al.

Abstract:

Purpose: With the increasing burden of noncommunicable disease, adolescence is viewed as an opportune time to prevent the onset of certain behaviors and promote healthy states. Although adolescents comprise a considerable portion of Saudi Arabia's population, they have received insufficient attention and indicators of their health status, as a first step in a prevention cycle are unavailable. This study was carried out with the aim of identifying the health risk behaviors and health status of adolescents in Saudi Arabia.

Methods: This cross-sectional, school-based study was carried out in all 13 regions of Saudi Arabia. Through multistage, cluster, random sampling, intermediate, and secondary school students were invited to participate. Data were collected by means of a self-administered questionnaire addressing health risk behaviors and health status, clinical anthropometric measurements, and laboratory investigations.

Results: A total of 12,575 adolescents participated. Various health risk behaviors, including dietary and sedentary behaviors, lack of safety measures, tobacco use, bullying, and violence were highly prevalent. Twenty-eight percent of adolescents reported having a chronic health condition, 14.3% reported having symptoms suggestive of depression, 30.0% were overweight/obese, and 95.6% were vitamin D deficient.

Conclusion: Behaviors and conditions known to persist into adulthood and result in morbidity and premature mortality are prevalent among adolescents in Saudi Arabia. Preventive measures and local health policies are urgently needed and can impact adolescents and future adults. Establishing adolescent health surveillance is necessary to monitor trends and impacts of such measures.

Journal: Journal of Adolescent Health

Year of Publication: 2015

Publication issue: 57(3)

Page numbers: 263-269

SHORTLINK: bit.ly/28h7l1f

Title: Long-term outcomes of individuals injured in motor vehicle crashes: A population-based study

Author(s): Alghnam, S., Wegener, S. T., Bhalla, K., Colantuonie, E. & Castillo, R.

Affiliation: King Abdullah International Medical Research Center, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Johns Hopkins School of Medicine, USA; ³⁻⁵ Johns Hopkins Bloomberg School of Public Health, Baltimore, USA.

Abstract:

Background: Despite decline in U.S. traffic fatalities, non-fatal injuries remain a main cause of reduced self-reported health. The authors used a nationally representative survey to examine the long-term (≥ 1 year) implications of traffic injuries on self-care, depression, mobility, pain and activity domains of a widely used measure assessing Health-Related Quality of Life (HRQOL).

Methods: 30,576 participants from panels (2000–2002) of the Medical Expenditure Panel Survey (MEPS) were followed for about two years. The associations between reporting a traffic injury in the first follow-up year and the five domains of the Euroqol Health index (EQ-5D) were assessed using mixed logistic models with outcome severe/moderate problem in each domain. Models adjustment variables included age, gender, education, income, diabetes, asthma, smoking and insurance status.

Results: 590 participants reported traffic injuries. In the first follow-up analysis, having an injury was associated with deficits in all domains of the EQ-5D. With the exception of self-care, similar findings were reported in the second follow-up (≥ 1 year) after injuries with strongest associations between traffic injuries and both mobility and activity (both OR = 2.9, $P < 0.01$).

Conclusions: Traffic injuries are significantly associated with long-term reduced HRQOL. Injured individuals may benefit from early intervention programs to prevent the development of secondary complications and reduced HRQOL.

Journal: Injury-International Journal of the Care of the Injured

Year of Publication: 2015

Publication issue: 46(8):

Page numbers: 1503-1508

SHORTLINK: bit.ly/1ObvWOp

Title: Determining child maltreatment incidence in Saudi Arabia using the ICAST-CH: A pilot study

Author(s): Al-Eissa, M. A., AlBuhairan, F. S., Qayad, M., Saleheen, H., Runyan, D., et al.

Affiliation: National Family Safety Program, King Saud bin Abdulaziz University for Health Sciences, and King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Department of Emergency Medicine, King Abdulaziz Medical City, Saudi Arabia; Department of Pediatrics, King Abdulaziz Medical City, Saudi Arabia; University of Colorado School of Medicine, Aurora, USA; et al.

Abstract:

Studies in other countries, including countries with mandated reporting by professionals and a long history of recognition of the problem, have found child abuse to be seriously under reported. This population-based pilot study was conducted to determine the magnitude of adolescents' exposure to CAN at home, and to identify ethical and methodological challenges to conducting a survey on a culturally sensitive subject. This cross-sectional study was carried out in Al-Kharj city in 2011-2012. Through a stratified multistage cluster random sampling of schools, a sample of adolescents (15-18 years) were identified and invited to participate. The ISPCAN Child Abuse Screening Tool-Child: Home version (ICAST-CH) was used for data collection. The previous year's incidence of physical, psychological, and sexual abuse, neglect, and exposure to violence were assessed. A total of 2,043 students participated in the study (mean age, 16.6 years; 58%, female). The incidence of psychological abuse, physical abuse, exposure to violence, neglect, and sexual abuse were 74.9%, 57.5%, 50.7%, 50.2%, and 14.0%, respectively. Female participants were at higher risk for psychological and physical abuse, exposure to violence, and neglect, but not for sexual abuse. The rates and gender distribution of CAN at home differ from findings of health-based records. Our results are comparable to other regional population-based studies. Thus, population-based data are necessary to inform and guide professionals and decision makers for prevention policies and resource allocation. Insights to ethical and methodological challenges surrounding the sensitive nature of this type of study are discussed.

Journal: Child Abuse & Neglect

Year of Publication: 2015

Publication issue: 174-182

Page numbers: 42

SHORTLINK: bit.ly/22LqBjs

Title: Comparative outcome analysis of home-initiated non-medical interventions among toddlers with orally ingested substances

Author(s): Alanazi, M. Q., Al-Jeraisy, M. I. & Salam, M.

Affiliation: Drug Policy and Economic Center, Riyadh, Saudi Arabia; King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

BACKGROUND: Poison management guidelines recommend contacting or visiting poison centers directly after exposure. However, some parents initiated non-medical interventions on their children before visiting these centers. Aim was to evaluate the clinical and hospital outcomes of such practices among toddlers with orally ingested medication or chemical substances at a tertiary care facility.

METHODS: Retrospective cohort, based on four-arm outcome analysis. Exposures were gender, age, body mass index, arrival time to facility (hours) presented in Median [Interquartile range]. Clinical outcomes were vital signs, physical examination, diagnostic tests; Hospital outcomes were in-hospital admission, length of hospital stay (hours) presented in Median [Interquartile range], hospital cost (\$US). Bivariate analysis (nonparametric tests), binary logistic/linear regression were conducted. Significance at $p < 0.05$.

RESULTS: Between 2009-2011, 165 (all previously healthy) toddlers were (Males = 58 %, females = 42 %) and had normal weights in 70 %. Witnessed incidents were in 85 %. Two control groups [Medication (control) = 72, Chemical (control) = 48] directly visited the facility after incident, while two intervention groups [Medication (intervention) = 27, Chemical (intervention) = 18] received orally administered water, salt/sugar solutes, milk/yogurt, lemon juice and/or manually induced vomiting before the visit. Abnormal clinical outcomes in total were in vital signs = 15 %, physical examination = 42 % and diagnostic tests = 26 %; hospital outcomes were admission = 16 %, length of stay range (2 hours-7.5 days), cost range (667-11,500). Bivariate analysis: Length of stay in Medication (intervention) = 9[5.4-12.0] hours significantly higher than Medication (control) = 5[2.7-7.5] hours, $p = 0.003$; abnormal physical examination in Chemical (intervention) = 77.8 % significantly higher than Chemical (control) = 37.5 %, $p = 0.004$. In regression: intervention significantly increased length of stay ($t = 0.213$, adj. $P = 0.035$); lower weight toddlers were at higher risk of admission (Beta = -0.51, adj. $P = 0.018$); delayed arrival time significantly increased abnormal physical ...

CONCLUSION: Home-initiated non-medical interventions didn't improve the clinical and hospital outcomes. It has delayed the arrival time to emergency department, which added the risk of encountering abnormal physical examination, and in return increased the average length of hospital stay.

Journal: Italian Journal of Pediatrics

Year of Publication: 2015

Publication issue: 41

Page numbers: -

SHORTLINK: bit.ly/25JddxX

Title: Using the health belief model to predict breast self examination among Saudi women Health behavior, health promotion and society

Author(s): Abolfotouh, M. A., Banimustafa, A. A., Mahfouz, A. A., Al-Assiri, M. H., Al-Juhani, A. F., et al.

Affiliation: King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; King Saud bin-Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; King Abdulaziz Medical City, Ministry of National Guard - Health Affairs, Riyadh, Saudi Arabia; et al.

Abstract:

Background

In Saudi Arabia, breast cancer (BC) usually presents at advanced stages and more frequently in young pre-menopausal women in comparison to western countries. There is controversy surrounding the efficacy of breast self examination (BSE) for early detection of BC in countries where other methods are available. This study aims to explore the perception towards breast cancer and towards BSE among Saudi women, using the Health Belief Model (HBM).

Methods

A convenient sample of adult Saudi female employees, working at King Abdulaziz Medical City, Riyadh, Saudi Arabia ($n = 225$), and their non-working adult female family members ($n = 208$), were subjected to the Arabic version of revised Champion's Health Belief Model Scale (CHBMS) and the Arabic version of Breast Cancer Awareness Measure (CAM), to assess their knowledge and attitude on BC respectively. Percentage mean score (PMS) for each HBM domain was calculated. Significant predictors of BSE practice were identified using logistic regression analysis and significance was considered at $p < 0.05$.

Results

The majority of women heard about BSE (91.2 %), only 41.6 % reported ever practicing BSE and 21 % performed it regularly. Reported reasons for not doing BSE were: not knowing how to examine their breast (54.9 %), or untrusting themselves able to do it (24.5 %). Women were less knowledgeable about BC in general, its risk factors, warning signs, nature and screening measures (PMS: 54.2 %, 44.5 %, 61.4 %, 53.2 %, 57.6 % respectively). They reported low scores of; perceived susceptibility, seriousness, confidence and barriers (PMS: 44.8 %, 55.6 %, 56.5 % & 41.7 % respectively), and high scores of perceived benefits and motivation (PMS: 73 % & 73.2 % respectively) to perform BSE. Significant predictors of BSE performance were: levels of perceived barriers ($p = 0.046$) and perceived confidence ($p = 0.001$) to BSE, overall knowledge on BC ($p < 0.001$), work status ($p = 0.032$) and family history of BC ($p = 0.011$).

Conclusions

Saudi women had poor knowledge on BC, reported negative attitude towards BSE and their practice was poor. Working women and those with family history of BC, higher perceived confidence and lower ...

Journal: BMC Public Health

Year of Publication: 2015

Publication issue: 15(1)

Page numbers: -

SHORTLINK: bit.ly/1TXelft

Title: Tackling cancer control in the Gulf Cooperation Council Countries

Author(s): Al-Othman, S., Haoudi, A., Alhomoud, S., Alkhenizan, A., Khoja, T., et al.

Affiliation: King Abdullah International Medical Research Center, King Abdulaziz Medical City, Riyadh, Saudi Arabia; ³⁻⁴ King Faisal Special Hospital and Research Centre, Riyadh, Saudi Arabia; Health Ministers Council for Cooperation Council, Riyadh, Saudi Arabia; et al.

Abstract:

Cancer is a major health problem in both high income and middle-to-low income countries, and is the second leading cause of death in the world. Although more than a third of cancer could be prevented and another third could be cured if diagnosed early, it remains a huge challenge to health-care systems worldwide. Despite substantial improvements in health services some of the countries in the Gulf region, the burden of non-communicable diseases is a major threat, primarily due to the rapid socioeconomic shifts that have led to unfavourable changes in lifestyle such as increased tobacco use, decreased physical activity, and consumption of unhealthy food. In the Gulf Cooperation Council states (United Arab Emirates, Bahrain, Saudi Arabia, Oman, Qatar, and Kuwait), advanced breast cancer, colorectal cancer, leukaemia, thyroid cancer, and non-Hodgkin lymphomas are the most common cancers affecting younger populations compared with other countries. By contrast with cancer prevalence in developed countries, prostate, lung, and cervical cancers are not among the most common cancers in the Gulf region. In view of the increased cost of cancer management worldwide, integrated approaches between primary, secondary, and tertiary health-care systems with special focus on prevention and early detection is an essential step in the countries' efforts in the fight against cancer.

Journal: Lancet Oncology

Year of Publication: 2015

Publication issue: 16(5)

Page numbers: E246-E257

SHORTLINK: [bit.ly/ http://22Lr70M](http://bit.ly/22Lr70M)

Title: Quantification of insulin receptor mRNA splice variants as a diagnostic tumor marker in breast cancer

Author(s): Aljada, A., Saleh, A. M., Al-Aqeel, S. M., Shamsa, H. B., Al-Bawab, A., et al.

Affiliation: ¹⁻⁵ Department of Basic Medical Sciences, King Saud Bin Abdulaziz University for Health Sciences, Saudi Arabia; ^{1-2,4} King Abdullah International Medical Research Center, National Guard Health Affairs, Riyadh, Saudi Arabia.

Abstract:

BACKGROUND:

The mature human insulin receptor (INSR) has two isoforms: The A isoform and the B isoform. INSR upregulation has been suggested to play a role in cancer.

OBJECTIVE:

To establish quantitative PCR method for INSR transcript variants and examine their differential expression as a diagnostic tumor marker in breast cancer.

METHODS:

The differential expression of IR-A and IR-B were evaluated by TaqMan qRT-PCR assay in the commercially available Breast Cancer Disease cDNA and Cancer Survey cDNA arrays.

RESULTS:

The mRNA expression levels of IR-A was statistically significantly higher in breast cancer when compared to normal breast tissue while IR-B mRNA expression was down regulated significantly in breast cancer. Stratification of patients into groups according to metastatic stages indicated statistically significantly higher levels of IR-A mRNA in clinical stage (CS)-IV, and lower IR-B levels in CS-IIA, CS-IIIB and CS-IIIC. However, IR-A:IR-B ratio showed a statistically significant increase in all stages. Cancer Survey cDNA array demonstrated lower levels of IR-B mRNA in breast adenocarcinoma, liver carcinoma and lung carcinoma only while IR-A expression was significantly altered in kidney carcinoma without any significant differences in IR-A:IR-B ratios.

CONCLUSIONS:

The results demonstrate an increased IR-A:IR-B ratio in all clinical stages of breast cancer. Thus, IR-A:IR-B ratio may have a diagnostic biomarker utility in breast cancer.

Journal: Cancer Biomarkers

Year of Publication: 2015

Publication issue: 15(5)

Page numbers: 653-661

SHORTLINK: bit.ly/25Jdmlg

Title: High Frequency and Poor Prognosis of Late Childhood BCR-ABL-Positive and MLL-AF4-Positive ALL Define the Need for Advanced Molecular Diagnostics and Improved Therapeutic Strategies in Pediatric B-ALL in Pakistan

Author(s): Iqbal, Z., Akhtar, T., Awan, T., Aleem, A., Sabir, N., et al.

Affiliation: Medical Genetics/Hematology and Oncology, King Saud Bin Abdulaziz University for Health Sciences/King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Faculty of Biological Sciences, University of the Punjab, Lahore, Pakistan; College of Medicine, King Khalid University Hospital, King Saud University, Riyadh, Saudi Arabia;

Abstract:

BACKGROUND: Fusion oncogenes (FOs) resulting from chromosomal abnormalities have an important role in leukemogenesis in pediatric B cell acute lymphoblastic leukemia (ALL). The most common FOs are BCR-ABL, MLL-AF4, ETV6-RUNX1, and TCF3-PBX1, all of which have important prognostic and drug selection implications. Moreover, frequencies of FOs have ethnic variations. We studied Pakistani frequencies of FOs, clinical pattern, and outcome in pediatric B-ALL.

METHODS: FOs were studied in 188 patients at diagnosis using reverse transcriptase-polymerase chain reaction (RT-PCR) and interphase fluorescent in situ hybridization (FISH). Data were analyzed using SPSS version 17 (SPSS Inc., Chicago, IL, USA).

RESULTS: FOs were detected in 87.2 % of patients. Mean overall survival was 70.9 weeks, 3-year survival was 31.9 %, and 3-year relapse-free survival was 18.1 %. Four patients died of drug toxicities. ETV6-RUNX1 (19.14 %) had better survival (110.9 weeks; $p = 0.03$); TCF3-PBX1 (2.1 %) was associated with inferior outcome and higher central nervous system (CNS) relapse risk; MLL-AF4 (18.1 %) was more common in the 8- to 15-year age group (24/34; $p = 0.001$) and was associated with organomegaly, low platelet count, and poor survival; and BCR-ABL (47.9 %) was associated with older age (7-15 years, 52/90), lower remission rates, shorter survival (43.73 ± 4.24 weeks) and higher white blood cell count. Overall, MLL-AF4 and BCR-ABL were detected in 66 % of B-ALL, presented in later childhood, and were associated with poor prognosis and inferior survival.

CONCLUSIONS: This study reports the highest ethnic frequency of BCR-ABL FO in pediatric ALL, and is consistent with previous reports from our region. Poor prognosis BCR-ABL and MLL-AF4 was detected in two-thirds of pediatric B-ALL and is likely to be the reason for the already reported poor survival of childhood ALL in South-East Asia. Furthermore, MLL-AF4, usually most common in infants, presented in later childhood in most of the ALL patients, which was one of the unique findings in our study. The results presented here highlight the need for mandatory inclusion of molecular testing for pediatric ALL patients in clinical decision making, together with the incorporation of tyrosine kinase inhibitors, as well as hematopoietic stem cell transplantation facilities, to improve treatment outcome for patients in developing countries.

Journal: Molecular Diagnosis & Therapy

Year of Publication: 2015

Publication issue: 19(5)

Page numbers: 277-287

SHORTLINK: bit.ly/1t4wlmu

Title: Divergent roles of PAX2 in the etiology and progression of ovarian cancer

Author(s): Al-Hujaily, E. M., Tang, Y., Yao, D. S., Carmona, E., Garson, E., et al.

Affiliation: Ottawa Hospital Research Institute, Ottawa, Canada; University of Ottawa, Canada; King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Affiliated Cancer Hospital of Guangxi Medical University, Nanning, China; Affiliated Cancer Hospital of Guangxi Medical University, Nanning, China; Centre de recherche du Centre hospitalier de l'Université de Montréal, Institut du cancer de Montréal, Montréal, Canada; Centre for Cancer Therapeutics, Ottawa Hospital Research Institute, Ottawa, Canada; et al.

Abstract:

PAX2 is an essential transcription factor for development. Aberrant PAX2 expression in adult tissues is associated with carcinogenesis and experimental evidence shows that PAX2 generally exhibits oncogenic properties. Although PAX2 is not expressed in normal ovaries, it is highly expressed in low malignant potential and low-grade epithelial ovarian tumors, suggesting that PAX2 induction in ovarian surface epithelium (OSE) may contribute to transformation. Herein, we provide evidence that expression of PAX2 in normal murine OSE cells (mOSE) enhances their proliferation and survival and, with loss of p53, induces tumorigenicity. PAX2 expression in murine ovarian cancer cells enhanced or inhibited tumorigenicity, depending on the model system. In RM cells (mOSE transformed by K-RAS and c-MYC), PAX2 expression inhibited p53 and induced pERK1/2 and COX2, resulting in enhanced angiogenesis and decreased apoptosis of tumors arising from these cells. However, in a murine model of high-grade serous ovarian cancer (STOSE), PAX2 expression improved animal survival by reducing proliferation and metastasis, which correlated with increased Htra1 and decreased COX2. Thus, PAX2 may not be a classical oncogene or tumor suppressor but instead can act in either role by differential regulation of COX2 and/or HTRA1.

Journal: Cancer Prevention Research

Year of Publication: 2015

Publication issue: 8(12)

Page numbers: 1163-1173

SHORTLINK: bit.ly/1Ycoi8G

Title: Advanced glycation endproducts increase proliferation, migration and invasion of the breast cancer cell line MDA-MB-231

Author(s): Sharaf, H., Matou-Nasri, S., Wang, Q., Rabhan, Z., Al-Eidi, H., et al.

Affiliation: ^{1,3} Manchester Metropolitan University, Manchester, UK; ^{2,4-5} King Abdullah International Medical Research Center; Medical Genomics Research Department, National Guard Health Affairs, Riyadh, Saudi Arabia; et al.

Abstract:

Diabetic patients have increased likelihood of developing breast cancer. Advanced glycation endproducts (AGEs) underlie the pathogenesis of diabetic complications but their impact on breast cancer cells is not understood. This study aims to determine the effects of methylglyoxal-derived bovine serum albumin AGEs (MG-BSA-AGEs) on the invasive MDA-MB-231 breast cancer cell line. By performing cell counting, using wound-healing assay, invasion assay and zymography analysis, we found that MG-BSA-AGEs increased MDA-MB-231 cell proliferation, migration and invasion through Matrigel™ associated with an enhancement of matrix metalloproteinase (MMP)-9 activities, in a dose-dependent manner. Using Western blot and flow cytometry analyses, we demonstrated that MG-BSA-AGEs increased expression of the receptor for AGEs (RAGE) and phosphorylation of key signaling protein extracellular signal-regulated kinase (ERK)-1/2. Furthermore, in MG-BSA-AGE-treated cells, phospho-protein microarray analysis revealed enhancement of phosphorylation of the ribosomal protein 70 serine S6 kinase beta 1 (p70S6K1), which is known to be involved in protein synthesis, the signal transducer and activator of transcription (STAT)-3 and the mitogen-activated protein kinase (MAPK) p38, which are involved in cell survival. Blockade of MG-BSA-AGE/RAGE interactions using a neutralizing anti-RAGE antibody inhibited MG-BSA-AGE-induced MDA-MB-231 cell processes, including the activation of signaling pathways. Throughout the study, non-modified BSA had a negligible effect. In conclusion, AGEs might contribute to breast cancer development and progression partially through the regulation of MMP-9 activity and RAGE signal activation. The up-regulation of RAGE and the concomitant increased phosphorylation of p70S6K1 induced by AGEs may represent promising targets for drug therapy to treat diabetic patients with breast cancer.

Journal: Biochimica Et Biophysica Acta-Molecular Basis of Disease

Year of Publication: 2015

Publication issue: 1852(3)

Page numbers: 429-441

SHORTLINK: bit.ly/214UNEG

Title: Development of Polymeric Nanoparticles of *Garcinia mangostana* Xanthonenes in Eudragit RL100/RS100 for Anti-Colon Cancer Drug Delivery

Author(s): Aisha, A. F. A., Abdulmajid, A. M. S., Ismail, Z., Alrokayan, S. A. & Abu-Salah, K. M.

Affiliation: ¹⁻² School of Pharmaceutical Sciences, Universiti Sains Malaysia, Malaysia; King Abdullah Institute for Nanotechnology, King Saud University, Riyadh, Saudi Arabia; ⁴⁻⁵ Nanomedicine Section, King Abdullah International Medical Research Center, Riyadh, Saudi Arabia.

Abstract:

Xanthonenes are a group of oxygenated heterocyclic compounds with anticancer properties, but poor aqueous solubility and low oral bioavailability hinder their therapeutic application. This study sought to prepare a xanthonenes extract (81% α -mangostin and 16% β -mangostin) in polymeric nanoparticles and to investigate its intracellular delivery and cytotoxicity toward colon cancer cells. The nanoparticles were prepared in Eudragit RL100 and Eudragit RS100 by the nanoprecipitation method at drug loading and entrapment efficiency of 20% and >95%, respectively. Freeze-drying of bulk nanoparticle solutions, using glucose or sucrose as cryoprotectants, allowed the collection of nanoparticles at >95% yield. Solubility of the xanthonenes extract was improved from 0.1 g/mL to 1250 g/mL. Transmission electron microscopy (TEM) and dynamic light scattering (DLS) of the freeze-dried final formulation showed the presence of cationic round nanoparticles, with particle size in the range of 32–130 nm. Scanning electron microscopy (SEM) showed the presence of nanospheres, and Fourier transform infrared (FTIR) spectroscopy indicated intermolecular interaction of xanthonenes with Eudragit polymers. Cellular uptake of nanoparticles was mediated via endocytosis and indicated intracellular delivery of xanthonenes associated with potent cytotoxicity (median inhibitory concentration 26.3 \pm 0.22 g/mL). Presented results suggest that cationic nanoparticles of xanthonenes may provide a novel oral drug delivery system for chemoprevention or treatment of intestinal and colon tumors.

Journal: Journal of Nanomaterials

Year of Publication: 2015

Publication issue: -

Page numbers: -

SHORTLINK: bit.ly/1X8mVrZ

Title: The Anticancer Activity of the Substituted Pyridone-Annulated Isoindigo (5'-Cl) Involves G0/G1 Cell Cycle Arrest and Inactivation of CDKs in the Promyelocytic Leukemia Cell Line HL-60

Author(s): Saleh, A. M., Aljada, A., El-Abadelah M. M., Taha, M. O., Zahra, J. A., et al.

Affiliation: ¹⁻² Department of Basic Medical Sciences, King Saud bin Abdulaziz University for Health Sciences; Riyadh, Saudi Arabia, King Abdullah International Medical Research Center, Riyadh, Saudi Arabia, Department of Chemistry, University of Jordan, Jordan; Faculty of Pharmacy, University of Jordan, Jordan; et al.

Abstract:

Background/Aims: The antileukemic potential of isoindigos make them desired candidates for understanding their mechanism of action. We have recently synthesized a novel group of pyridone-annulated isoindigos and identified the derivative 5'-Cl that is cytotoxic to various cancer cell lines. In the present study, we analyzed the effect of this compound on cell cycle of the promyelocytic leukemia cell line HL-60.

Methods: HL-60 cells were treated with 5'-Cl and its effect on cell cycle stages were determined by flow cytometry. Expression of cyclins, cyclin dependent kinases (CDKs) and cyclin kinase inhibitors (CKIs) were determined by Western blotting, and activation of CDKs was studied using kinase assays.

Results: 5'-Cl remarkably arrested cell cycle in HL-60 cells at the G0/G1 phase in a dose and time-dependent manner. Furthermore, 5'-Cl treatment significantly inhibited expression of D-cyclins, CDK2 and CDK4 and suppressed phosphorylation of the retinoblastoma protein Rb, whereas it increased the level of CKI p21. Molecular modelling experiments show that 5'-Cl may compete with ATP for binding to the catalytic subunit of CDK2 and CDK4 that could lead to inhibition of these enzymes. Indeed, 5'-Cl inhibited the kinase activity of CDK2 and CDK4 both in cell free systems and in treated cells. 5'-Cl also inhibited cell cycle progression in several other tumor cell lines.

Conclusion: We demonstrate the potent inhibitory effects of 5'-Cl on HL-60 cells could be mediated by arresting cells in the G0/G1 phase.

Journal: Cellular Physiology and Biochemistry

Year of Publication: 2015

Publication issue: 35(5)

Page numbers: 1943-1957

SHORTLINK: bit.ly/214UdqH

Title: New isoflavones from *Gynandris sisyrinchium* and their antioxidant and cytotoxic activities

Author(s): Al-Qudah, M. A., Saleh, A. M., Al-Jaber, H. I., Tashtouch, H. I., Lahham, J. N., et al.

Affiliation: Faculty of Science, Yarmouk University, Irbid, Jordan; Department of Basic Medical Sciences, King Saud Bin Abdulaziz University for Health Sciences, and King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Faculty of Engineering Technology, Al-Balqa Applied University, Marka, Jordan; ⁴⁻⁵ Faculty of Science, Yarmouk University, Irbid, Jordan; et al.

Abstract:

Chemical investigation of *Gynandris sisyrinchium* (L.) Parl growing in Jordan resulted in the isolation and characterization of a total of twelve compounds two of which are reported here for the first time in nature. These new compounds included the isoflavones; 3'-methyl tenuifone (2) and gynandrinone (5). In addition, ten known compounds including; β -sitosterol (1), 7,3'-dimethoxy-5,6,4'-trihydroxyisoflavone (3), iristectorigenin (4), hispidulin (6), galangustin (7), 6-hydroxybiochanin A (8), ursolic acid (9), ladanetin (10), 4'-O-methylgenistein (11) and β -sitosterol glucoside (12) are also reported here for the first time from *G. sisyrinchium*. The isolated compounds were characterized by different spectroscopic methods including NMR (1D and 2D), UV, IR and MS (HRESIMS and EIMS). The antioxidant and cytotoxic activities of isoflavones 2, 3 and 5 were investigated. Compound 3 showed the highest antioxidant activity (IC₅₀=17.3 μ g/mL), as compared to compounds 5 and 2 (IC₅₀=26.7 and 51.7 μ g/mL, respectively). The cytotoxic activity against the human promyelocytic leukemia HL-60 cells revealed that compound 2 was the most active (40 μ M). The results indicate that the cytotoxicity of compound 2 is mediated by apoptosis.

Journal: Fitoterapia

Year of Publication: 2015

Publication issue: 107

Page numbers: 15-21

SHORTLINK: bit.ly/1RW35lu

Title: IFN-alpha 2a or IFN-beta 1a in combination with ribavirin to treat Middle East respiratory syndrome coronavirus pneumonia: a retrospective study

Author(s): Shalhoub, S., Farahat, F., Al-Jiffri, A., Simhairi, R., Shamma, O., et al.

Affiliation: Department of Medicine, King Fahad Armed Forces Hospital, Jeddah, Saudi Arabia; King Saud bin Abdulaziz University for Health Sciences, King Abdullah International Medical Research Center; King Fahad Armed Forces Hospital, Jeddah, Saudi Arabia; King Fahad Armed Forces Hospital, Jeddah, Saudi Arabia; Department of Critical Care, King Fahad Armed Forces Hospital, Jeddah, Saudi Arabia; et al.

Abstract:

Objectives Middle East respiratory syndrome coronavirus (MERS-CoV) is associated with significant mortality. We examined the utility of plasma MERS-CoV PCR as a prognostic indicator and compared the efficacies of IFN- α 2a and IFN- β 1a when combined with ribavirin in reducing MERS-CoV-related mortality rates.

Methods We retrospectively analysed 32 patients with confirmed MERS-CoV infection, admitted between April 2014 and June 2014, by positive respiratory sample RT-PCR. Plasma MERS-CoV RT-PCR was performed at the time of diagnosis for 19 patients.

Results The overall mortality rate was 69% (22/32). Ninety percent (9/10) of patients with positive plasma MERS-CoV PCR died compared with 44% (4/9) of those with negative plasma MERS-CoV PCR. Mortality rate in patients who received IFN- α 2a was 85% (11/13) compared with 64% (7/11) in those who received IFN- β 1a ($P=0.24$). The mortality rate in patients with renal failure (14), including 8 on haemodialysis, was 100%. Age >50 years and diabetes mellitus were found to be significantly associated with mortality (OR=26.1; 95% CI 3.58–190.76; $P=0.001$ and OR=15.74; 95% CI 2.46–100.67; $P=0.004$, respectively). The median duration of viral shedding in patients who recovered was 11 days (range 6–38 days). Absence of fever was noted in 5/32 patients.

Conclusions Plasma MERS-CoV RT-PCR may serve as an effective tool to predict MERS-CoV-associated mortality. Older age and comorbid conditions may have contributed to the lack of efficacy of IFN- α 2a or IFN- β 1a with ribavirin in treating MERS-CoV. Absence of fever should not exclude MERS-CoV.

Journal: Journal of Antimicrobial Chemotherapy

Year of Publication: 2015

Publication issue: 70(7)

Page numbers: 2129-2132

SHORTLINK: bit.ly/1rb3YXW

Title: Diagnostic utility of QuantiFERON-TB gold (QFT-G) in active pulmonary tuberculosis

Author(s): Anwar, A., Hamdan, A. J., Salim, B., Yosra, A., Hani, M., et al.

Affiliation: King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Department of Medicine, Pulmonary Division-ICU, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; George Washington University, Washington, DC, USA; et al.

Abstract:

Background: The utility of QuantiFERON-TB Gold In-Tube (QFT-G) test in the diagnosis of tuberculosis disease has been validated in high and low tuberculosis-prevalent (TB) countries. **Aim:** The aim of this study is to assess the performance of the QFT-G test in the diagnosis of tuberculosis disease among tuberculosis patients in an intermediate prevalent country.

Setting and Design: A retrospective study at the King Abdulaziz Medical City-Riyadh (KAMC-R)

Materials and Methods: We retrospectively reviewed all the patients with a diagnosis of pneumonia, including tuberculosis, admitted to KAMC-R between 1 January 2009 and 31 December 2013. We included only patients with an available result of the QFT-G test. A total of 142 tuberculosis cases and 226 pneumonia cases were studied, to assess the utility of the QFT-G test in diagnosing tuberculosis cases. **Results:** Among the tuberculosis ($n = 142$) cases, the QFT-G tested positive in 68.3%, negative in 23.2%, and indeterminate in 12 cases (8.5%). Of the 226 pneumonia cases, the QFT-G tested positive in only 20.4%, while a majority of 66.4% tested negative, with 30 cases (13.3%) being indeterminate. When we excluded 42 patients with indeterminate results, the QFT-G test achieved a sensitivity of 74.6% [95% CI: 66.09 to 81.65%] and specificity of 76.53 % [95% CI: 69.85 to 82.15%] in the diagnosis of tuberculosis cases.

Conclusions: This study concludes that the QFT-G test is a useful tool for detecting tuberculosis disease when used as an adjunct tool for the diagnosis of active TB cases. It certainly cannot be used solely and indiscriminately, separate from other clinical and radiological information, in the diagnosis of active tuberculosis cases.

Journal: Journal of Global Infectious Diseases

Year of Publication: 2015

Publication issue: 7(3)

Page numbers: 108-112

SHORTLINK: bit.ly/28h9b2d

Title: Deletion of Fifteen Open Reading Frames from Modified Vaccinia Virus Ankara Fails to Improve Immunogenicity

Author(s): Alharbi, N. K., Spencer, A. J., Hill, A. V. & Gilbert, S. C.

Affiliation: The Jenner Institute, University of Oxford, Oxford, UK; King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; The Jenner Institute, University of Oxford, UK.

Abstract:

Modified vaccinia virus Ankara (MVA) is a highly attenuated strain of vaccinia virus, which has been used as a recombinant vaccine vector in many vaccine development programmes. The loss of many immunosuppressive and host-range genes resulted in a safe and immunogenic vaccine vector. However it still retains some immunomodulatory genes that may reduce MVA immunogenicity. Earlier reports demonstrated that the deletion of the A41L, B15R, C6L, or C12L open reading frames (ORFs) enhanced cellular immune responses in recombinant MVA (rMVA) by up to 2-fold. However, previously, we showed that deletion of the C12L, A44L, A46R, B7R, or B15R ORFs from rMVA, using MVA-BAC recombineering technology, did not enhance rMVA immunogenicity at either peak or memory cellular immune responses. Here, we extend our previous study to examine the effect of deleting clusters of genes on rMVA cellular immunogenicity. Two clusters of fifteen genes were deleted in one rMVA mutant that encodes either the 85A antigen of Mycobacterium tuberculosis or an immunodominant H2-Kd-restricted murine malaria epitope (pb9). The deletion mutants were tested in prime only or prime and boost vaccination regimens. The responses showed no improved peak or memory CD8+ T cell frequencies. Our results suggest that the reported small increases in MVA deletion mutants could not be replicated with different antigens, or epitopes. Therefore, the gene deletion strategy may not be taken as a generic approach for improving the immunogenicity of MVA-based vaccines, and should be carefully assessed for every individual recombinant antigen.

Journal: Plos One

Year of Publication: 2015

Publication issue: 10(6)

Page numbers: -

SHORTLINK: bit.ly/1TXeaAD

Title: Antimicrobial properties of liposomal azithromycin for *Pseudomonas* infections in cystic fibrosis patients

Author(s): Solleti, V. S., Alhariri, M., Halwani, M. & Omri, A.

Affiliation: Department of Chemistry and Biochemistry, Laurentian University, Ontario, Canada; King Saud bin Abdulaziz University for Health Sciences, King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Department of Chemistry and Biochemistry, Laurentian University, Ontario, Canada.

Abstract:

OBJECTIVES:

This work was carried out to construct a novel liposomal azithromycin formulation and examine its antimicrobial effects against *Pseudomonas aeruginosa*.

METHODS:

The liposomal azithromycin formulation was prepared by the dehydration-rehydration vesicle method and its characterizations were tested. The MIC and the MBC of the liposomal formulation were determined by the microbroth dilution method. Liposomal azithromycin activity against biofilm-forming *P. aeruginosa* was assessed using a Calgary biofilm device. The effect of subinhibitory concentrations of liposomal azithromycin on bacterial virulence factors and motility studies was tested on *P. aeruginosa* strains. The bacteria and liposome interactions were studied using flow cytometry analysis. The toxicities of the liposomal formulation on erythrocytes and A549 lung cells were evaluated in vitro.

RESULTS:

The average diameter of the liposomal azithromycin was 406.07 ± 45 nm and the encapsulation efficiency was $23.8\% \pm 0.2\%$. The MIC and MBC values of liposomal azithromycin were significantly lower than those of free azithromycin. The liposomal azithromycin significantly reduced the bacteria in the biofilm and attenuated the production of different virulence factors; it also reduced the different patterns of bacterial motilities. By flow cytometry analysis data, it was shown that there are interactions of liposomes with the bacterial membranes. No significant haemolysis or cell toxicity was observed with the liposomal formulation.

CONCLUSIONS:

The results of this research indicate that this novel liposomal azithromycin formulation could be a useful therapy to enhance the safety and efficacy of azithromycin against *P. aeruginosa*-infected persons.

Journal: Journal of Antimicrobial Chemotherapy

Year of Publication: 2015

Publication issue: 70(3)

Page numbers: 784-796

SHORTLINK: bit.ly/1rb45mo

Title: Characteristics and Outcomes of Eligible Nonenrolled Patients in a Mechanical Ventilation Trial of Acute Respiratory Distress Syndrome

Author(s): Arabi, Y. M., Cook, D. J., Zhou, Q., Smith, O., Hand, L., et al.

Affiliation: Intensive Care Department, King Saud Bin Abdulaziz University for Health Sciences and King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Department of Clinical Epidemiology & Biostatistics, McMaster University, Ontario, Canada; Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, Canada; et al.

Abstract:

RATIONALE:

Patients eligible for randomized controlled trials may not be enrolled for various reasons. Nonenrollment may affect study generalizability and lengthen the time required for trial completion.

OBJECTIVES:

To describe characteristics and outcomes of eligible nonenrolled (ENE) patients in a multicenter trial of mechanical ventilation strategies.

METHODS:

Within the OSCILLATE trial of high-frequency oscillation (HFO) versus conventional ventilation (CV) in adults with adult respiratory distress syndrome, and with approval from research ethics boards, we collected a minimal dataset on patients who satisfied eligibility criteria but were not enrolled. We categorized ENE patients as ENE-HFO and ENE-CV based on receipt of HFO at any time. We used multivariable logistic regression to assess the association between ENE status and mortality.

MEASUREMENTS AND MAIN RESULTS:

A total of 548 patients were randomized, and 546 were ENE. The most common reasons for ENE were no consent (42%), physician refusal (24%), missed randomization window (15%), and current HFO use (14%). Compared with randomized patients in respective arms of the trial, ENE-HFO patients were younger and had worse lung injury, whereas ENE-CV patients had lower illness severity. ENE status was independently associated with mortality (adjusted odds ratio, 1.39; 95% confidence interval, 1.06-1.84; $P = 0.02$), with no significant interaction with ventilation treatment group.

CONCLUSIONS:

Nonenrollment was common, with approximately one ENE patient for every randomized patient. Our study suggests that enrollment in trials of mechanical ventilation may be associated with improved outcomes compared with standard care and highlights the need for prospective tracking and transparent reporting of ENE patients as part of trial management.

Journal: American Journal of Respiratory and Critical Care Medicine

Year of Publication: 2015

Publication issue: 192(11)

Page numbers: 1306-1313

SHORTLINK: [bit.ly/ http://1VJBXDw](http://bit.ly/1VJBXDw)

Title: Be early for enteral, no rush for calories!

Author(s): Preiser, J. C. & Arabi, Y. M.

Affiliation: Department of Intensive Care, Erasme University Hospital, Belgium; King Abdullah International Medical Research Center, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

The recent systematic review and meta-analysis by Marik and Hooper [1] challenges the long-held belief that more calories are better, one of the most controversial areas of discussion in the field of metabolic and nutritional support of the critically ill [2]. This classical statement has been mainly based on observational studies reporting an association between low caloric intakes and higher rate of complications [3, 4], while other retrospective studies have suggested a better outcome with hypocaloric than with normocaloric feeding [5, 6]. Importantly, the thorough and rigorous review of the recent randomized controlled trials [1] revealed no significant outcome difference between groups randomized to "hypocaloric" or "trophic" over "normocaloric" feeding, defined as the provision of energy designed to match the energy expenditure early during the course of critical illness

Journal: Intensive Care Medicine

Year of Publication: 2015

Publication issue: -

Page numbers: -

SHORTLINK: bit.ly/1YcoyVd

Title: Determinants of functional status among survivors of severe sepsis and septic shock: One-year follow-up

Author(s): Al Khalaf, M. S., Al Ehnidi, F. H., Al-Dorzi, H. M., Abd-Aziz, N., Tanqiisuran, B., et al.

Affiliation: Department of Clinical Pharmacist, Universiti Sains Malaysia, Malaysia; ^{2,4} King Abdullah International Medical Research Centre, Riyadh, Saudi Arabia; Department of Intensive Care, King Saud bin Abdul-Aziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

RATIONALE: Sepsis is a leading cause of intensive care unit (ICU) admissions worldwide and a major cause of morbidity and mortality. Limited data exist regarding the outcomes and functional status among survivors of severe sepsis and septic shock.

OBJECTIVES: This study aimed to determine the functional status among survivors of severe sepsis and septic shock a year after hospital discharge.

METHODS: Adult patients admitted between April 2007 and March 2010 to the medical-surgical ICU of a tertiary hospital in Saudi Arabia, were included in this study. The ICU database was investigated for patients with a diagnosis of severe sepsis or septic shock. Survival status was determined based on hospital discharge. Patients who required re-admission, stayed in ICU for less than 24 hours, had incomplete data were all excluded. Survivors were interviewed through phone calls to determine their functional status one-year post-hospital discharge using Karnofsky performance status scale.

RESULTS: A total of 209 patients met the eligibility criteria. We found that 38 (18.1%) patients had severe disability before admission, whereas 109 (52.2%) patients were with severe disability or died one-year post-hospital discharge. Only one-third of the survivors had good functional status one-year post-discharge (no/mild disability). After adjustment of baseline variables, age [adjusted odds ratio (aOR) = 1.03, 95% confidence interval (CI) = 1.01-1.04] and pre-sepsis functional status of severe disability (aOR = 50.9, 95% CI = 6.82-379.3) were found to be independent predictors of functional status of severe disability one-year post-hospital discharge among survivors.

CONCLUSIONS: We found that only one-third of the survivors of severe sepsis and septic shock had good functional status one-year post-discharge (no/mild disability). Age and pre-sepsis severe disability were the factors that highly predicted the level of functional status one-year post-hospital discharge.

Journal: Annals of Thoracic Medicine

Year of Publication: 2015

Publication issue: 10(2)

Page numbers: 132-136

SHORTLINK: bit.ly/1PfDryK

Title: Role of Free Fatty Acid Receptor 2 (FFAR2) in the Regulation of Metabolic Homeostasis

Author(s): Mohammad, S.

Affiliation: Department of Experimental, Medicine King Abdullah International Medical Research Center, Riyadh Saudi Arabia.

Abstract:

Besides being an important source of fuel and structural components of biological membranes, free fatty acids (FFAs) are known to display a wide variety of roles that include modulation of receptor signaling and regulation of gene expression among many. FFAs play a significant role in maintaining metabolic homeostasis by activating specific G-Protein Coupled Receptors (GPCRs) in pancreatic β cells, immune cells, white adipose tissue, intestine and several other tissues. Free Fatty acid receptor 2 (FFAR2) also known as GPR43 belongs to this group of GPCRs and has been shown to participate in a number of important biological activities. FFAR2 is activated by short-chain fatty acids (SCFAs) such as acetate, propionate and butyrate. SCFAs are formed in the distal gut by bacterial fermentation of macro-fibrous material that escapes digestion in the upper gastrointestinal tract and enters the colon and have been shown to play vital role in the immune regulation and metabolic homeostasis. FFAR2 and other free fatty acid receptors are considered key components of the body's nutrient sensing mechanism and targeting these receptors is assumed to offer novel therapies for the management of diabetes and other metabolic disorders. This review aims to summarize the current state of our understanding of FFAR2 biology with a particular focus on its role in metabolic homeostasis.

Journal: Current Drug Targets

Year of Publication: 2015

Publication issue: 16(7)

Page numbers: 771-775

SHORTLINK: bit.ly/1U5w7tY

Title: Diagnosis and treatment of late-onset Pompe disease in the Middle East and North Africa region: consensus recommendations from an expert group

Author(s): Al Jasmi, F., Al Jumah, M., Al-Qarni, F., Al-Sanna, N., Al-Sharif, F., et al.

Affiliation: College of Medicine and Health Science, United Arab Emirates University; King Abdullah International Medical Research Center, King Saud Bin Abdulaziz University for Health Sciences, NGH; Prince Mohammed Ben Abdulaziz Hospital, MOH; National Neurosciences Institute, King Fahad Medical City; Johns Hopkins Aramco Healthcare, Pediatrics Services Division; MCH; et al.

Abstract:

Background: Pompe disease is a rare autosomal recessive disorder caused by a deficiency of the lysosomal enzyme alpha-glucosidase responsible for degrading glycogen. Late-onset Pompe disease has a complex multisystem phenotype characterized by a range of symptoms.

Methods: An expert panel from the Middle East and North Africa (MENA) region met to create consensus-based guidelines for the diagnosis and treatment of late-onset Pompe disease for the MENA region, where the relative prevalence of Pompe disease is thought to be high but there is a lack of awareness and diagnostic facilities.

Results: These guidelines set out practical recommendations and include algorithms for the diagnosis and treatment of late-onset Pompe disease. They detail the ideal diagnostic workup, indicate the patients in whom enzyme replacement therapy should be initiated, and provide guidance on appropriate patient monitoring.

Conclusions: These guidelines will serve to increase awareness of the condition, optimize patient diagnosis and treatment, reduce disease burden, and improve patient outcomes.

Journal: BMC Neurology

Year of Publication: 2015

Publication issue: 15

Page numbers: -

SHORTLINK: bit.ly/1XzPEqy

Title: New isoflavones from *Gyandriris sisyrinchium* and their antioxidant and cytotoxic activities

Author(s): Al-Qudah, M. A., Saleh, A. M., Al-Jaber, H. I., Tashtouch, H. I., Lahham, J. N., et al.

Affiliation: Faculty of Science, Yarmouk University, Irbid, Jordan; King Saud Bin Abdulaziz University for Health Sciences and King Abdullah International Medical Research Center, Saudi Arabia; Al-Balqa Applied University, Marka, ^{4,5}Jordan; Faculty of Science, Yarmouk University, Irbid, Jordan; et al.

Abstract:

Chemical investigation of *Gynandriris sisyrinchium* (L.) Parl growing in Jordan resulted in the isolation and characterization of a total of twelve compounds two of which are reported here for the first time in nature. These new compounds included the isoflavones; 3'-methyl tenuifone (2) and gynandrinone (5). In addition, ten known compounds including; β -sitosterol (1), 7,3'-dimethoxy-5,6,4'-trihydroxyisoflavone (3), iristectorigenin (4), hispidulin (6), galangustin (7), 6-hydroxybiochanin A (8), ursolic acid (9), ladanetin (10), 4'-O-methylgenistein (11) and β -sitosterol glucoside (12) are also reported here for the first time from *G. sisyrinchium*. The isolated compounds were characterized by different spectroscopic methods including NMR (1D and 2D), UV, IR and MS (HRESIMS and EIMS). The antioxidant and cytotoxic activities of isoflavones 2, 3 and 5 were investigated. Compound 3 showed the highest antioxidant activity (IC₅₀=17.3 μ g/mL), as compared to compounds 5 and 2 (IC₅₀=26.7 and 51.7 μ g/mL, respectively). The cytotoxic activity against the human promyelocytic leukemia HL-60 cells revealed that compound 2 was the most active (40 μ M). The results indicate that the cytotoxicity of compound 2 is mediated by apoptosis.

Journal: Filoterapia

Year of Publication: 2015

Publication issue: 107

Page numbers: 15-21

SHORTLINK: bit.ly/1RW35lu

Title:

Increased Hypermethylation of Glutathione S-Transferase P1, DNA-Binding Protein Inhibitor, Death Associated Protein Kinase and Paired Box Protein-5 Genes in Triple-Negative Breast Cancer Saudi Females

Author(s): Hafez, M. H., Al-Shabanah, O. A., Al-Rejaie, S. S., Al-Harbi, N. O. & Aldelemy, M. L.

Affiliation: Department of Pharmacology and Toxicology, College of Pharmacy, Zoology Department, College of Science, Department of Pathology, Oncology Division, Department of Internal Medicine, College of Medicine, King Saud University, King Abdullah International Medical Research Center, Riyadh.

Abstract:

Triple negative breast cancer (TNBC) is an aggressive subtype of breast cancer (BC) with higher metastatic rate and both local and systemic recurrence compared to non-TNBC. The generation of reactive oxygen species (ROS) secondary to oxidative stress is associated with DNA damage, chromosomal degradation and alterations of both hypermethylation and hypomethylation of DNA. This study concerns differential methylation of promoter regions in specific groups of genes in TNBC and non-TNBC Saudi females in an effort to understand whether epigenetic events might be involved in breast carcinogenesis, and whether they might be used as markers for Saudi BCs. Methylation of glutathione S-transferase P1 (GSTP1), T-cadherin (CDH13), Paired box protein 5 (PAX5), death associated protein kinase (DAPK), twist-related protein (TWIST), DNA-binding protein inhibitor (ID4), High In Normal-1 (HIN-1), cyclin-dependent kinase inhibitor 2A (p16), cyclin D2 and retinoic acid receptor- β (RAR β 1) genes was analyzed by methylation specific polymerase chain reaction (MSP) in 200 archival formalin-fixed paraffin embedded BC tissues divided into 3 groups; benign breast tissues (20), TNBC (80) and non-TNBC (100). The relationships between methylation status, and clinical and pathological characteristics of patients and tumors were assessed. Higher frequencies of GSTP1, ID4, TWIST, DAPK, PAX5 and HIN-1 hypermethylation were found in TNBC than in non-TNBC. Hypermethylation of GSTP1, CDH13, ID4, DAPK, HIN-1 and PAX5 increased with tumor grade increasing. Other statistically significant correlations were identified with studied genes. Data from this study suggest that increased hypermethylation of GSTP1, ID4, TWIST, DAPK, PAX5 and HIN-1 genes in TNBC than in non-TNBC can act as useful biomarker for BCs in the Saudi population. The higher frequency of specific hypermethylated genes paralleling tumor grade, size and lymph node involvement suggests contributions to breast cancer initiation and progression.

Year of Publication: 2015

Publication issue: 16(2)

Page numbers: 541-549

SHORTLINK: bit.ly/1PD5zBt

Title: Altered Sirtuin 7 Expression is Associated with Early Stage Breast Cancer

Author(s): Aljada, A., Saleh, A. M., Alkathiri, M., Shamsa, H. S., Al-Bawab, A., et al.

Affiliation: ¹⁻² Department of Basic Medical Sciences, King Saud bin Abdulaziz University for Health Sciences, ³⁻⁵ King Abdullah International Medical Research Center, National Guard Health Affairs, Riyadh, Saudi Arabia; et al.

Abstract:

Background: To evaluate sirtuin-7 (SirT7) mRNA expression status in breast cancer patients with different metastatic stages and survey SirT7 mRNA expression status in eight different types of cancer.

Methods: The expression of SirT7 in the commercially available TissueScan qPCR Breast Cancer Disease cDNA arrays containing 16 normal, 23 Stage I, 36 IIA, 22 IIB, 8 IIIA, 23 IIIA, 6 IIIB, 13 IIIC, and 5 IV were evaluated by quantitative real-time polymerase chain reaction (qRT-PCR) assay. Similar analysis was performed in TissueScan qPCR Cancer Survey cDNA array, which includes breast, colon, kidney, liver, lung, ovarian, prostate, and thyroid specimens.

Results: The mRNA expression levels of SirT7 were significantly higher in breast cancer samples compared to normal breast specimens (P, 0.001). Stratification of patients into groups according to metastatic stages indicated statistically significantly higher levels of SirT7 mRNA in CS-I, CS-II, and CS-III when compared to normal breast tissue (P, 0.05). Notably, SirT7 mRNA levels were higher in CS-I, CS-IIA, CS-IIB, and CS-IIIA (P, 0.05). Additionally, there were significantly lower SirT7 mRNA levels in thyroid carcinoma when compared to their corresponding normal tissue (P, 0.05).

Conclusions: Our results indicate an increase in the mRNA expression level of SirT7 in breast cancer, particularly in CS-I, CS-IIA, CS-IIB, and CS-IIIA. The relationship of altered SirT7 with breast cancer progression and patient survival should be prospectively explored in future studies.

Journal: Breast Cancer: Basic and Clinical Research

Year of Publication: 2015

Publication issue: 9

Page numbers: 3-8

SHORTLINK: bit.ly/1WCVBIO

Title: Well-differentiated and anaplastic astroblastoma in the same patient: a case report and review of the literature

Author(s): Samkari, A., Hmoud, M., Al-Medhar, A. & Abdullah, S.

Affiliation: Department of Pathology, Laboratory Medicine, King Abdullah International Medical Research Center, King Saud bin Abdulaziz University for Health Sciences, Department of Radiology, Pediatric Oncology, King Abdulaziz Medical City – National Guard Health Affairs, Jeddah, Saudi Arabia.

Abstract:

Astroblastoma is a rare brain tumor occurring in children and adults, rarely in the elderly. It constitutes up to 3% of all brain tumors. We report a case of a 14-year-old girl who presented with recurrent seizures and minimal right hemiparesis. Magnetic resonance imaging (MRI) revealed a left fronto-parietal brain tumor. It was managed with subtotal resection in a local hospital. Subsequently, she was referred to Princess Nora Oncology Center for further characterization and management. Pathology slide revision revealed well-differentiated astroblastoma. Upon follow up, the patient had multiple recurrences of the same tumor and emergence of a new lesion at the area of Sylvian fissure. Excision of the emerging tumor revealed anaplastic astroblastoma. Astroblastoma is a glial tumor that predominantly affects females. Its clinical progression is unpredictable, with high recurrence rate. Surgical intervention is considered the mainstay of treatment, while radiotherapy and chemotherapy effectiveness is debatable. To our knowledge, this is the first reported case of well-differentiated and anaplastic astroblastoma as two separate neoplastic lesions in the same patient with its clinical, radiological, and pathological features.

Journal: Clinical Neuropathology

Year of Publication: 2015

Publication issue: 34(6)

Page numbers: 350-358

SHORTLINK: bit.ly/1ZtXZt2

Title: Computerized physician order entry of a sedation protocol is not associated with improved sedation practice or outcomes in critically ill patients

Author(s): Haddad, S. H., Gonzales, C. B., Deep, A. M., Tamim, H. M., Al-Babtain, I., et al.

Affiliation: ^{1-2,4-5} King Abdulaziz Medical City, Riyadh, Saudi Arabia; Monash University, Melbourne, Australia; King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; American University of Beirut Medical Center, Beirut, Lebanon; King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Background: Computerized Physician Order Entry (CPOE) analgesia-sedation protocols may improve sedation practice and patients' outcomes. We aimed to evaluate the impact of the introduction of CPOE protocol.

Methods: This was a prospective, observational cohort study of adult patients receiving mechanical ventilation, requiring intravenous infusion of analgesics and/or sedatives, and expected to stay in the intensive care unit (ICU) ≥ 24 h. As a quality improvement project, the study had three phases: phase 1, no protocol, July 1st to September 30th, 2010; phase 2, post implementation of CPOE protocol, October 1st to December 31st, 2010; and phase 3, revised (age, kidney and liver function adjusted) CPOE protocol, August 1st to October 31st, 2011. Multivariate analyses were performed to determine the independent predictors of mortality.

Results: Two hundred seventy nine patients were included (no protocol = 91, CPOE protocol = 97, revised CPOE protocol = 91). Implementation of CPOE protocol was associated with increase of the average daily dose of fentanyl (3720 ± 3286 vs. 2647 ± 2212 mcg/day; $p = 0.009$) and decrease of hospital length of stay (40 ± 37 vs. 63 ± 85 days, ($p = 0.02$). The revised CPOE protocol was associated with, compared to the CPOE protocol, a decrease of the average daily dose of fentanyl (2208 ± 2115 vs. 3720 ± 3286 mcg/day, $p = 0.0002$) and lorazepam (0 ± 0 vs. 0.06 ± 0.26 mg/day, $p = 0.04$), sedation-related complications during ICU stay (3.3 % vs. 29.9 %, $p < 0.0001$), and ICU mortality (18 % vs. 39 %, $p = 0.001$). The impact of the revised CPOE protocol was more evident on patients aged >70 years or with severe kidney or liver impairment...

Conclusions: The implementation of a CPOE analgesia-sedation protocol was not associated with improved sedation practices or patients' outcome but with unpredicted increases of an analgesic dose. However, the revised CPOE protocol (age, kidney and liver function adjusted) was associated with improved sedation practices.

Journal: BMC Anesthesiology

Year of Publication: 2015

Publication issue: 15

Page numbers:

SHORTLINK: bit.ly/1TT7pL2

Title: Cardiac computed tomography in current cardiology guidelines

Author(s): Al-Mallah, M. H., Aljizeeri, A., Villines, T. C., Srichai, M. B. & Alsaileek, A.

Affiliation: King Abdulaziz Cardiac Center, Riyadh, Saudi Arabia; King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia; King Abdullah International Medical Research Center, Saudi Arabia; Walter Reed National Military Medical Center, Bethesda, USA; Medstar Heart Institute Washington, DC, USA; Pediatric Oncology, King Abdulaziz Medical City, Jeddah, Kingdom of Saudi Arabia.

Abstract:

Practice guidelines issued by professional societies significantly impact cardiology practice throughout the world. They increasingly incorporate cardiac CT imaging. This review systematically analyzes clinical practice guidelines issued by the American College of Cardiology Foundation (ACCF)/American Heart Association (AHA) and the European Society of Cardiology (ESC) as well as the multi-societal appropriateness criteria in their latest versions as of September 1st, 2015, in order to identify the extent to which they include recommendations to use cardiac CT in specific clinical situations.

Journal: Journal of Cardiovascular Computed Tomography

Year of Publication: 2015

Publication issue: 9(6)

Page numbers: 514-523

SHORTLINK: bit.ly/1U5xqZD

Title: Descriptive characteristics of children with autism at Autism Treatment Center, KSA

Author(s): Al Shirian, S. & Al Dera, H.

Affiliation: ¹⁻² College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia; King Abdullah International Medical Research Center, Saudi Arabia.

Abstract:

Autism characteristics in sixty children (aged from 2 to 8) were assessed. Their behavioral symptoms were evaluated using the Autism Treatment Evaluation Checklist (ATEC). ATEC has four main domains of autistic disorders (Speech/Language/Communication, Sociability, Sensory/Cognitive Awareness, and Health/Physical/Behavior) in children with clinical diagnosis by Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) and Childhood Autism Rating Scale (CARS) of autism spectrum disorder (ASD). Utilizing ATEC checklist, our study describes significant behavioral observations between autistic children which could effectively contribute to better understanding and treatment during their early intervention stage.

Journal: Physiology & Behavior

Year of Publication: 2015

Publication issue: 151

Page numbers: 604-608

SHORTLINK: bit.ly/214VfCT

Title: Understanding Cultural Competence in a Multicultural Nursing Workforce: Registered Nurses' Experience in Saudi Arabia

Author(s): Almutairi, A. F., McCarthy, A. & Garder, G. E.

Affiliation: Queensland University of Technology, Queensland, Australia; University of British Columbia, Canada; King Abdullah International Medical Research Centre, and King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Purpose: In Saudi Arabia, the health system is mainly staffed by expatriate nurses from different cultural and linguistic backgrounds. Given the potential risks this situation poses for patient care, it is important to understand how cultural diversity can be effectively managed in this multicultural environment. The purpose of this study was to explore notions of cultural competence with non-Saudi Arabian nurses working in a major hospital in Saudi Arabia.

Design: Face-to-face, audio-recorded, semistructured interviews were conducted with 24 non-Saudi Arabian nurses. Deductive data collection and analysis were undertaken drawing on Campinha-Bacote's cultural competence model. The data that could not be explained by this model were coded and analyzed inductively.

Findings: Nurses within this culturally diverse environment struggled with the notion of cultural competence in terms of each other's cultural expectations and those of the dominant Saudi culture.

Discussion: The study also addressed the limitations of Campinha-Bacote's model, which did not account for all of the nurses' experiences. Subsequent inductive analysis yielded important themes that more fully explained the nurses' experiences in this environment.

Implications for Practice: The findings can inform policy, professional education, and practice in the multicultural Saudi setting.

Journal: Journal of Transcultural Nursing

Year of Publication: 2015

Publication issue: 26(1)

Page numbers: 16-23

SHORTLINK: bit.ly/1te0ZQh

Title: Decreased STAT3 in human idiopathic fetal growth restriction contributes to trophoblast dysfunction

Author(s): Borg, A. J., Yong, H. E. J., Lappas, M., Degrelle, S. A., Keogh, R. J., et al.

Affiliation: ¹⁻⁵ Royal Women's Hospital, Victoria, Australia; ²⁻³ King Abdullah International Medical Research Centre and King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Abnormal trophoblast function is associated with fetal growth restriction (FGR). The JAK-STAT pathway is one of the principal signalling mechanisms by which cytokines and growth factors modulate cell proliferation, differentiation, cell migration and apoptosis. The expression of placental JAK-STAT genes in human idiopathic FGR is unknown. In this study, we propose the hypothesis that JAK-STAT pathway genes are differentially expressed in idiopathic FGR-affected pregnancies and contribute to abnormal fetoplacental growth by modulating the expression of the amino acid transporter SNAT2, differentiation marker CGB/human chorionic gonadotrophin beta-subunit (β -hCG) and apoptosis markers caspases 3 and 8, and TP53. Expression profiling of FGR-affected placentae revealed that mRNA levels of STAT3, STAT2 and STAT5B decreased by 69, 52 and 50%, respectively, compared with gestational-age-matched controls. Further validation by real-time PCR and immunoblotting confirmed significantly lower STAT3 mRNA and STAT3 protein (total and phosphorylated) levels in FGR placentae. STAT3 protein was localised to the syncytiotrophoblast (ST) in both FGR and control placentae. ST differentiation was modelled by *in vitro* differentiation of primary villous trophoblast cells from first-trimester and term placentae, and by treating choriocarcinoma-derived BeWo cells with forskolin in cell culture. Differentiation in these models was associated with increased STAT3 mRNA and protein levels. In BeWo cells treated with siRNA targeting STAT3, the mRNA and protein levels of CGB/ β -hCG, caspases 3 and 8, and TP53 were significantly increased, while that of SNAT2 was significantly decreased compared with the negative control siRNA. In conclusion, we report that decreased STAT3 expression in placentae may contribute to abnormal trophoblast function in idiopathic FGR-affected pregnancies.

Journal: Reproduction

Year of Publication: 2015

Publication issue: 149(5)

Page numbers: 523-532

SHORTLINK: bit.ly/22Lt5hG

Title: Severe neurologic syndrome associated with Middle East respiratory syndrome corona virus (MERS-CoV)

Author(s): Arabi, Y. M., Harthi, A., Hussein, J., Bouchama, A., Johani, S., et al.

Affiliation: ^{1,4} King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Department of Medicine, King Abdulaziz Medical City, Saudi Arabia; Medical Imaging Department, King Abdulaziz Medical City, Saudi Arabia; Microbiology, Pathology and Laboratory Medicine, King Abdulaziz Medical City, Saudi Arabia et al.

Abstract:

BACKGROUND: Since the identification of the first case of infection with the Middle East respiratory syndrome corona virus (MERS-CoV) in Saudi Arabia in June 2012, the number of laboratory-confirmed cases has exceeded 941 cases globally, of which 347 died. The disease presents as severe respiratory infection often with shock, acute kidney injury, and coagulopathy. Recently, we observed three cases who presented with neurologic symptoms. These are so far the first reported cases of neurologic injury associated with MERS-CoV infection.

METHODS: Data was retrospectively collected from three patients admitted with MERS-CoV infection to Intensive Care unit (ICU) at King Abdulaziz Medical City, Riyadh. They were managed separately in three different wards prior to their admission to ICU.

FINDING: The three patients presented with severe neurologic syndrome which included altered level of consciousness ranging from confusion to coma, ataxia, and focal motor deficit. Brain MRI revealed striking changes characterized by widespread, bilateral hyperintense lesions on T2-weighted imaging within the white matter and subcortical areas of the frontal, temporal, and parietal lobes, the basal ganglia, and corpus callosum. None of the lesions showed gadolinium enhancement.

INTERPRETATION: CNS involvement should be considered in patients with MERS-CoV and progressive neurological disease, and further elucidation of the pathophysiology of this virus is needed.

Journal: Infection

Year of Publication: 2015

Publication issue: 43(4)

Page numbers: 495-501

SHORTLINK: bit.ly/1Uw2rDo

Title: Antibiotic-resistant ST38, ST131 and ST405 strains are the leading uropathogenic Escherichia coli clones in Riyadh, Saudi Arabia

Author(s): Alghoribi, M. F., Gibreel, T. M., Farnham, G., Johani, S. M., Balky, H. H. & Upton, M.

Affiliation: University of Manchester, Manchester; Faculty of Medicine, University of Tripoli, Libya; Plymouth University Peninsula Schools of Medicine and Dentistry, Plymouth, UK; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; ^{1,5} King Abdullah International Medical Research Center, Riyadh, Saudi Arabia.

Abstract:

OBJECTIVES: We investigated the molecular epidemiology of uropathogenic Escherichia coli (UPEC) from a tertiary care hospital in Riyadh, Saudi Arabia, revealing, for the first time, the population structure of UPEC in the region.

METHODS: A total of 202 UPEC isolates were recovered from hospital and community patients with urinary tract infection in December 2012 and January 2013. Strains were characterized by MLST, antibiotic susceptibility determination and virulence gene detection.

RESULTS: The most common lineages were ST131 (17.3%), ST73 (11.4%), ST38 (7.4%), ST69 (7.4%), ST10 (6.4%), ST127 (5.9%), ST95 (5.4%), ST12 (3.5%), ST998 (3.5%) and ST405 (3%). ST131 and ST405 isolates were significantly associated with high levels of antibiotic resistance (60% of ST131 carried CTX-M-14 or CTX-M-15 and 66.7% of ST405 isolates carried CTX-M-15). ST131, CTX-M-15-positive isolates were predominantly of the fimH30/clade C group, resistant to fluoroquinolones; members of this sub-group were more likely to carry a high number of genes encoding selected virulence determinants. The relatively high proportion of ST38 was notable and four of these isolates harboured aggR.

CONCLUSIONS: Our findings highlight the presence of MDR, CTX-M-positive ST38, ST131 and ST405 UPEC in Saudi Arabia. The high proportion of isolates with CTX-M is a particular concern. We suggest that ST38 UPEC warrant further study.

Journal: Journal of Antimicrobial Chemotherapy

Year of Publication: 2015

Publication issue: 70(10)

Page numbers: 2757-2762

SHORTLINK: bit.ly/1Y5tJpl

Title: The Neurological Outcome of Isolated PVL and Severe IVH in Preterm Infants: Is It Fair to Compare?

Author(s): Al Rifai, M. T. & Al Tawil, K. L.

Affiliation: ¹⁻² King Abdullah International Medical Research Center/King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

OBJECTIVE:

We compared the neurological outcome of isolated periventricular leukomalacia and severe intraventricular hemorrhage in a cohort of very low birth weight infants born and managed at single tertiary-care center in Saudi Arabia.

METHODS:

We undertook a descriptive retrospective chart review of the neurological status of very low birth weight infants who were born and managed over a 5-year period at King Abdulaziz Medical City, Riyadh. The neurological outcome of neonates with isolated periventricular leukomalacia and severe intraventricular hemorrhage (grades III and IV) was studied and compared in relation to developmental delay and cerebral palsy.

RESULTS:

A total of 20 patients with isolated periventricular leukomalacia and 26 with severe intraventricular hemorrhage (grades III and IV) were identified for this study. Of 20 patients with isolated periventricular leukomalacia, 9 (45%) had good developmental outcome and 11 (55%) had bad developmental outcome. Of 26 patients of severe intraventricular hemorrhage, 14 (54%) had good developmental outcome and 12 (46%) had bad developmental outcome ($P = 0.55$). Significant motor neurological deficit affecting function is distributed as follows: 11/20 (55%) in the isolated periventricular leukomalacia group and 7/26 (27%) in the severe intraventricular hemorrhage group ($P = 0.05$). Cerebral palsy was diplegic in 7/11 (64%) and quadriplegic in 4/11 (36%) in the isolated periventricular leukomalacia group, and hemiplegic 3/7 (43%), diplegic in 1/7 (14%), and quadriplegic in 3/7 (43%) in the severe intraventricular hemorrhage group ($P = 0.03$). Distribution of the neurological outcome according to periventricular leukomalacia grade was as follows: for periventricular leukomalacia grade I ($n = 8$), 6/8 (75%) had good neurological outcome and 2/8 (25%) had bad neurological outcome. ...

Journal: Pediatric Neurology

Year of Publication: 2015

Publication issue: 53(5)

Page numbers: 427-433

SHORTLINK: bit.ly/1UDiEt6

Title: A novel HLA-DQ allele, HLA-DQB1*05:48, found in the Saudi Stem Cells Donor Registry

Author(s): Fakhoury, H. A., Alaskar, A. S. & Hajeer, A. H.

Affiliation: College of Science and Health Professions, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

The allele *HLA-DQB1*05:48* differs from *HLA-DQB1*05:01:01* by a non-synonymous T to C substitution at nucleotide position 1693 in exon 2.

Journal: Tissue Antigens

Year of Publication: 2015

Publication issue: 86(3)

Page numbers: 218-219

SHORTLINK: bit.ly/1UbKhul

Title: Non-suicidal self-strangulation among adolescents in Saudi Arabia: Case series of the choking game

Author(s): AlBuhairan, F., AlMutari, A., Al Eissa, M., Naeem, M. & Almuneef, M.

Affiliation: ^{1-3,5}National Family Safety Program, King Abdulaziz Medical City, Riyadh, Saudi Arabia, King Abdullah International Medical Research Center; King Abdullah International Medical Research Center and King Saud Bin Abdulaziz University for Health Sciences.

Abstract:

Adolescence is known to be a time of exploration and initiation of risky behaviors. Much attention has been given to risk behaviors such as smoking, violence, and sexual promiscuity; other serious behaviors such as self-strangulation or the choking game, which is carried out by adolescents in response to peer pressures or to gain a transient sense of euphoria, have received little attention, with the available literature coming from the developed world. This is the first report of cases of non-suicidal self-strangulation from the Arab World. In this case series, we report 5 cases of non-suicidal self-strangulation that presented to the Emergency Department of a tertiary care hospital in Riyadh, Saudi Arabia during 2010-2012. All of the 5 cases were young male adolescents aged 10-13 years. This activity resulted in the death of 2 boys; one boy sustained hypoxic ischemic insult to the brain with clinical deficits; and the remaining 2 were fortunate to be discharged home in healthy condition. None of the cases had underlying mental health problems, and multidisciplinary involvement ruled out suicide and homicide activities. Non-suicidal self-strangulation is a fatal behavior that adolescents engage in. Increased efforts are needed to address this serious and preventable public health issue. Awareness and education of adolescents and their parents is crucial. Awareness of healthcare providers is also necessary in order to avoid misdiagnosis of such cases.

Journal: Journal of Forensic Medicine,

Year of Publication: 2015

Publication issue: 30

Page numbers: 43-45

SHORTLINK: bit.ly/1RW3hHZ

Title: Three new HLA-C alleles (HLA-C*14:02:13, HLA-C*15:72 and HLA-C*15:74) in Saudi bone marrow donors

Author(s): Fakhoury, H. A., Jawdat, D., Alaskar, A. S., Al Jumah, M., Cereb, N., et al.

Affiliation: Department of Basic Sciences, College of Science and Health Professions, King Saud bin Abdulaziz University for Health Sciences, National Guard Health Affairs, Riyadh, Saudi Arabia; ²⁻⁴ King Abdullah International Medical Research Center, National Guard Health Affairs, Riyadh, Saudi Arabia; Histogenetics, Ossining, NY, USA.

Abstract:

Three new HLA-C alleles were identified by sequence-based typing method (SBT) in donors for the Saudi Bone Marrow Donor Registry (SBMDR). HLA-C*14:02:13 differs from HLA-C*14:02:01 by a silent G to A substitution at nucleotide position 400 in exon 2, where lysine at position 66 remains unchanged. HLA-C*15:72 differs from HLA-C*15:22 by a nonsynonymous C to A substitution at nucleotide position 796 in exon 3, resulting in an amino acid change from phenylalanine to leucine at position 116. HLA-C*15:74 differs from HLA-C*15:08 by a nonsynonymous C to T substitution at nucleotide position 914 in exon 3, resulting in an amino acid change from arginine to tryptophan at position 156.

Journal: International Journal of Immunogenetics

Year of Publication: 2015

Publication issue: 42(5)

Page numbers: 359-360

SHORTLINK: bit.ly/1UnpCQI

Title: Antiproliferative activity of the isoindigo 5'-Br in HL-60 cells is mediated by apoptosis, dysregulation of mitochondrial functions and arresting cell cycle at G0/G1 phase

Author(s): Saleh, A. M., El-Abadelah, M. M., Aziz, M. A., Taha, M. O., Nasr, A., et al.

Affiliation: King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; ³⁻⁴ University of Jordan, Amman, Jordan; Faculty of Pharmacy; Faculty of Sciences and Technology, Al-Neelain University, Khartoum, Sudan; et al.

Abstract:

Our new compound, 5'-Br [(E)-1-(5'-bromo-2'-oxoindolin-3'-ylidene)-6-ethyl-2,3,6,9-tetrahydro-2,9-dioxo-1H-pyrrolo[3,2-f]quinoline-8-carboxylic acid], had shown strong, selective antiproliferative activity against different cancer cell lines. Here, we aim to comprehensively characterize the mechanisms associated with its cytotoxicity in the human promyelocytic leukemia HL-60 cells. We focused at studying the involvement of apoptotic pathway and cell cycle effects. 5'-Br significantly inhibited proliferation by inducing caspase-dependent apoptosis. Involvement of caspase independent mechanism is also possible due to observed inability of z-VAD-FMK to rescue apoptotic cells. 5'-Br was found to trigger intrinsic apoptotic pathway as indicated by depolarization of the mitochondrial inner membrane, decreased level of cellular ATP, modulated expression and phosphorylation of Bcl-2 leading to loss of its association with Bax, and increased release of cytochrome c. 5'-Br treated cells were found arrested at G0/G1 phase with modulation in protein levels of cyclins, dependent kinases and their inhibitors. Expression and enzymatic activity of CDK2 and CDK4 was found inhibited. Retinoblastoma protein (Rb) phosphorylation was also inhibited whereas p21 protein levels were increased. These results suggest that the antiproliferative mechanisms of action of 5'-Br could involve apoptotic pathways, dysregulation of mitochondrial functions and disruption of cell cycle checkpoint.

Journal: Cancer Letters

Year of Publication: 2015

Publication issue: 361(1)

Page numbers: 251-261

SHORTLINK: bit.ly/1PD7HJo

Title: Altered Lamin A/C splice variant expression as a possible diagnostic marker in breast cancer

Author(s): Aljada, A., Doria, J., Saleh, A. M., Al-Matar, S. H., Algabbani, S., et al.

Affiliation: King Saud bin Abdulaziz University for Health Sciences & King Abdullah International Medical Research Center, Riyadh, Kingdom of Saudi Arabia; Virginia Commonwealth University Medical Center, Richmond, USA; ^{4,5} Department of Basic Medical Sciences, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Background: Lamin A/C alternative splice variants (Lamin A, Lamin C, Lamin A Δ 10 and Lamin A Δ 50) have been implicated in cell cycle regulation, DNA replication, transcription regulation, cellular differentiation, apoptosis and aging. In addition, loss of Lamin A/C expression has been observed in several cancers, including breast cancer, and it has been found that Lamin A/C suppression may lead to cancer-like aberrations in nuclear morphology and aneuploidy. Based on these observations, we hypothesized that Lamin A/C transcript variant quantification might be employed for the diagnosis of breast cancer. Methods Newly designed TaqMan qRT-PCR assays for the analysis of Lamin A/C splice variants were validated and their use as biomarkers for the diagnosis of breast cancer was assessed using 16 normal breast tissues and 128 breast adenocarcinomas. In addition, the expression levels of the Lamin A/C transcript variants were measured in samples derived from seven other types of cancer. Results We found that the expression level of Lamin C was significantly increased in the breast tumors tested, whereas the expression levels of Lamin A and Lamin A Δ 50 were significantly decreased. No significant change in Lamin A Δ 10 expression was observed. Our data also indicated that the Lamin C : Lamin A mRNA ratio was increased in all clinical stages of breast cancer. Additionally, we observed increased Lamin C: Lamin A mRNA ratios in liver, lung and thyroid carcinomas and in colon, ovary and prostate adenocarcinomas. Conclusions: From our data we conclude that the Lamin C: Lamin A mRNA ratio is increased in breast cancer and that this mRNA ratio may be of diagnostic use in all clinical stages of breast cancer and, possibly, also in liver, lung, thyroid, colon, ovary and prostate cancers.

Journal: Cell Oncology

Year of Publication: 2015

Publication issue: -

Page numbers: -

SHORTLINK: bit.ly/1Obyzjk

Title: Anemia and Blood Transfusion in Patients with Isolated Traumatic Brain Injury

Author(s): Al-Dorzi, H. M., Al-Humaid, W., Tamim, H. M., Hadad, S., Aljabbary, A., et al.

Affiliation: ^{1,5} King Abdulaziz Medical City, Riyadh, Saudi Arabia; College of Medicine, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Department of Internal Medicine, American University of Beirut, Beirut; et al.

Abstract:

Rationale: By reducing cerebral oxygen delivery, anemia may aggravate traumatic brain injury (TBI) secondary insult. This study evaluated the impact of anemia and blood transfusion on TBI outcomes.

Methods: This was a retrospective cohort study of adult patients with isolated TBI at a tertiary-care intensive care unit from 1/1/2000 to 31/12/2011. Daily hemoglobin level and packed red blood cell (PRBC) transfusion were recorded. Patients with hemoglobin < 10 g/dL during ICU stay (anemic group) were compared with other patients.

Results: Anemia was present on admission in two (2%) patients and developed in 48% during the first week with hemoglobin < 7 g/dL occurring in 3.0%. Anemic patients had higher admission Injury Severity Score and underwent more craniotomy (50% versus 13%, $p < 0.001$). Forty percent of them received PRBC transfusion (2.8 ± 1.5 units per patient, median pretransfusion hemoglobin = 8.8 g/dL). Higher hospital mortality was associated with anemia (25% versus 6% for nonanemic patients, $p = 0.01$) and PRBC transfusion (38% versus 9% for nontransfused patients, $p = 0.003$). On multivariate analysis, only PRBC transfusion independently predicted hospital mortality (odds ratio: 6.8; 95% confidence interval: 1.1–42.3).

Conclusions: Anemia occurred frequently after isolated TBI, but only PRBC transfusion independently predicted mortality.

Journal: Critical Care Research and Practice.

Year of Publication: 2015

Publication issue: Epub 2015.

Page numbers: -

SHORTLINK: bit.ly/1te1ji1

Title: Appropriate and timely antimicrobial therapy in cirrhotic patients with spontaneous bacterial peritonitis-associated septic shock: A retrospective cohort study

Author(s): Karvellas, C. J., Abraldes, J. G., Alrabi, Y. M., Kumar, A., et al.

Affiliation: ¹⁻² University of Alberta, Canada; College of Medicine, King Saud Bin Abdulaziz University for Health Sciences and King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; Health Sciences Center and St. Boniface Hospital, University of Manitoba, Canada; et al.

Abstract:

BACKGROUND: Spontaneous bacterial peritonitis (SBP)-associated septic shock carries significant mortality in cirrhosis.

AIM: To determine whether practice-related aspects of antimicrobial therapy contribute to high mortality.

METHODS: Retrospective cohort study of all (n = 126) cirrhotics with spontaneous bacterial peritonitis (neutrophil count >250 or positive ascitic culture)-associated septic shock (1996-2011) from an international, multicenter database. Appropriate antimicrobial therapy implied either in vitro activity against a subsequently isolated pathogen (culture positive) or empiric management consistent with broadly accepted norms (culture negative).

RESULTS: Overall hospital mortality was 81.8%. Comparing survivors (n = 23) with non-survivors (n = 103), survivors had lower Acute Physiology and Chronic Health Evaluation (APACHEII) (mean \pm s.d.; 22 ± 7 vs. 32 ± 8) and model for end-stage liver disease (MELD) (24 ± 9 vs. 34 ± 11) scores and serum lactate on admission (4.9 ± 3.1 vs. 8.9 ± 5.3), $P < 0.001$ for all. Survivors were less likely to receive inappropriate initial antimicrobial therapy (0% vs. 25%, $P = 0.013$) and received appropriate antimicrobial therapy earlier [median 1.8 (1.1-5.2) vs. 9.5 (3.9-14.3) h, $P < 0.001$]. After adjusting for covariates, APACHEII [OR, odds ratio 1.45 (1.04-2.02) per 1 unit increment, $P = 0.03$], lactate [OR 2.34 (1.04-5.29) per unit increment, $P = 0.04$] and time delay to appropriate antimicrobials [OR 1.86 (1.10-3.14) per hour increment, $P = 0.02$] were significantly associated with increased mortality.

CONCLUSIONS: Cirrhotic patients with septic shock secondary to spontaneous bacterial peritonitis have high mortality (>80%). Each hour of delay in appropriate antimicrobial therapy was associated with a 1.86 times increased hospital mortality. Admission APACHEII and serum lactate also significantly impacted hospital mortality. Earlier initiation of appropriate antimicrobial therapy could substantially improve outcome.

Journal: Alimentary Pharmacology and Therapeutics

Year of Publication: 2015

Publication issue: 41(8)

Page numbers: 747-757

SHORTLINK: bit.ly/214Z372

Title: Pharmacist, the pharmaceutical industry and pharmacy education in Saudi Arabia: A questionnaire-based study

Author(s): Bin Saleh, G., Rezk, N. L., Laika, L., Ali, A. & El-Metwally, A.

Affiliation: ^{1-2,4-5} College of Public Health and Health Informatics, King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia; Taibah University, School of Medicine and Applied Health Sciences, Medina, Saudi Arabia; Andor Labs, Durham, USA; King Abdullah International Medical Research Center, Riyadh, Saudi Arabia.

Abstract:

Background: In Saudi Arabia there is an estimated need of more than 100,000 pharmacy graduates to cover all present sectors. The shortage of pharmacists has affected many of these sectors especially the pharmaceutical industry. The contribution of Saudi pharmacists to local pharmaceuticals industry would be extremely beneficial and important for shaping the future of the drug industry within the Kingdom. It is not clear whether future Saudi pharmacists are willing to contribute to local pharmaco-industrial fields. Methods: A cross-sectional, questionnaire-based survey was conducted on all final-year pharmacy students in King Saud University (KSU), Riyadh, Saudi Arabia (KSA). Results: Out of a total of 130 students registered in the final-year of the pharmacy program in KSU, 122 (93.8%) were able to complete the questionnaire. The results showed that the majority (83%) of Saudi pharmacy students indicated that they had not received practical training in the pharmaceutical companies, while only 17.2% of the students felt that they had the knowledge and the skills to work in the pharmaceutical industry after graduation. The majority of the students (66.7%) chose clinical pharmacy as their future career field while only 10.9% indicated willingness to work in a pharmaceutical industry career. Only 8.2% selected working in the pharmaceutical industry. The significant predictor of possibly choosing a career in the local drug industry is a student with a bachelor's degree (compared to Pharm D degree) in pharmacy (OR =2.7 [95% CI 1.1–6.3]). Conclusion: Pharmacy students who are enrolled in the capital city of Riyadh are not properly trained to play an influential role in local drug companies.

As a result, their level of willingness to have a career in such important business is not promising (more among Pharm D program). Future research in other pharmacy colleges within Saudi Arabia is needed to confirm such results.

Journal: Saudi Pharmaceutical Journal

Year of Publication: 2015

Publication issue: 23(5)

Page numbers: 573-580

SHORTLINK: bit.ly/1WCYIKB

Title: Chemical reaction method for growing photomechanical organic microcrystals

Author(s): Al-Kaysi, R. O., Zhu, L. Y., Al-Hidar, M., Al-Mhannanh, M. K., El-Boubbou, K., et al.

Affiliation: ^{1,3,5} College of Science and Health Professions, King Saud bin Abdulaziz University for Health Sciences, and King Abdullah International Medical Research Center; Department of Chemistry University of California, Riverside, USA; National Nanotechnology Center, King Abdulaziz City for Science and Technology, Saudi Arabia; et al.

Abstract:

(*E*)-3-(Anthracen-9-yl)acrylic acid (**9-AYAA**) exhibits a strong photomechanical response in bulk crystals but is challenging to grow in microcrystalline form. High quality microcrystals of this molecule could not be grown using techniques like sublimation, reprecipitation, and the floating drop method. If the *tert*butyl ester of **9-AYAA** is used as a starting material, however, high quality, size-uniform microwires could be grown *via* acid catalyzed hydrolysis. **9-AYAA** microwires with uniform length and thickness were produced after a suspension of (*E*)-*tert*-butyl 3-(anthracen-9-yl)acrylate ester microparticles was tumble-mixed in a mixture of phosphoric acid and sodium dodecyl sulfate at 35 °C. The dependence of the results on temperature, surfactant and precursor concentration, and mixing mode was investigated. This chemical reaction-growth method was extended to grow microplates of 9-anthraldehyde using the corresponding acylal as the starting material. Under 475 nm irradiation, the **9-AYAA** microwires undergo a photoinduced coiling–uncoiling transition, while the 9-anthraldehyde microplates undergo a folding–unfolding transition.

Journal: CrystEngCSomm

Year of Publication: 2015

Publication issue: 17(46)

Page numbers: 8835-8842

SHORTLINK: bit.ly/1TTb9fi

Title: Investigation of IRES Insertion into the Genome of Recombinant MVA as a Translation Enhancer in the Context of Transcript Decapping

Author(s): Alharbi, N. K., Chinnakannan, S. K., Gilbert, S. C. & Draper, S. J.

Affiliation: The Jenner Institute, University of Oxford, UK; King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; ²⁻⁴ University of British Columbia, Canada.

Abstract:

Recombinant modified vaccinia virus Ankara (MVA) has been used to deliver vaccine candidate antigens against infectious diseases and cancer. MVA is a potent viral vector for inducing high magnitudes of antigen-specific CD8⁺ T cells; however the cellular immune responses to a recombinant antigen in MVA could be further enhanced by increasing transgene expression. Previous reports showed the importance of utilizing an early poxviral promoter for increasing transgene expression and therefore enhancing cellular immune responses. However, the vaccinia D10 decapping enzyme is reported to target and decap vaccinia virus early transcripts – a mechanism that could limit the usefulness of early promoters in MVA viral vectors if this enzyme shows the same activity in this closely related virus. Therefore, we attempted to increase transgene expression in recombinant MVA by inserting the encephalomyocarditis virus (EMCV) internal ribosome entry site (IRES) upstream of a transgene sequence that is controlled by the *B8R* early promoter, and assessed D10 enzyme decapping activity in MVA. The aim of the IRES element was to initiate translation of the transgene transcript (after the removal of the cap structure by the D10 decapping protein) in a cap-independent manner. Here, we report that overexpression of the D10 decapping protein, *in trans*, in MVA reduced growth and transgene expression; however, the IRES element was not able to compensate for the negative effect of the D10 decapping protein. Recombinant MVA with EMCV IRES induced levels of both gene expression and transcription that were similar to the control recombinant MVA, encoding the same transgene but without the IRES element. Both viruses were tested in BALB/c mice and induced similar magnitudes of epitope-specific CD8⁺ T cells. This work indicates that the MVA version of the D10 decapping enzyme, overexpressed using a plasmid, is functional, but its negative effect on transgene expression by recombinant MVA cannot be overcome by the use of the EMCV IRES inserted upstream of the transgene initiation codon.

Journal: Plos One

Year of Publication: 2015

Publication issue: 10(5)

Page numbers:

SHORTLINK: bit.ly/1t4DWH2

Title: Competing risk analysis for evaluation of dalteparin versus unfractionated heparin for venous thromboembolism in medical-surgical critically ill patients

Author(s): Li, G., Cook, D. J., Levine, M. A., Guyatt, G., ... Arabi, Y. M., et al.

Affiliation: ¹⁻⁴ Department of Clinical Epidemiology and Biostatistics McMaster University, Father Sean O'Sullivan Research Centre, St. Joseph's Healthcare Hamilton; King Saud bin Abdulaziz University for Health Sciences and King Abdullah International Medical Research Center, Riyadh, Saudi Arabia; et al.

Abstract:

Failure to recognize the presence of competing risk or to account for it may result in misleading conclusions. We aimed to perform a competing risk analysis to assess the efficacy of the low molecular weight heparin dalteparin versus unfractionated heparin (UFH) in venous thromboembolism (VTE) in medical-surgical critically ill patients, taking death as a competing risk. This was a secondary analysis of a prospective randomized study of the Prophylaxis for Thromboembolism in Critical Care Trial (PROTECT) database. A total of 3746 medical-surgical critically ill patients from 67 intensive care units (ICUs) in 6 countries receiving either subcutaneous UFH 5000 IU twice daily (n=1873) or dalteparin 5000 IU once daily plus once-daily placebo (n=1873) were included for analysis. A total of 205 incident proximal leg deep vein thromboses (PLDVT) were reported during follow-up, among which 96 were in the dalteparin group and 109 were in the UFH group. No significant treatment effect of dalteparin on PLDVT compared with UFH was observed in either the competing risk analysis or standard survival analysis (also known as cause-specific analysis) using multivariable models adjusted for APACHE II score, history of VTE, need for vasopressors, and end-stage renal disease: sub-hazard ratio (SHR)=0.92, 95% confidence interval (CI): 0.70-1.21, P-value=0.56 for the competing risk analysis; hazard ratio (HR)=0.92, 95% CI: 0.68-1.23, P-value=0.57 for cause-specific analysis. Dalteparin was associated with a significant reduction in risk of pulmonary embolism (PE): SHR=0.54, 95% CI: 0.31-0.94, P-value=0.02 for the competing risk analysis; HR=0.51, 95% CI: 0.30-0.88, P-value=0.01 for the cause-specific analysis. Two additional sensitivity analyses using the treatment variable as a time-dependent covariate and using as-treated and per-protocol approaches demonstrated similar findings. This competing risk analysis yields no significant treatment effect on PLDVT but a superior effect of dalteparin on PE compared with UFH in medical-surgical critically ill patients.

Journal: Medicine (United States)

Year of Publication: 2015

Publication issue: 94(36).

Page numbers: e1479

SHORTLINK: bit.ly/10bCFYD

Title: Cultural acceptance of robotic telestroke medicine among patients and healthcare providers in Saudi Arabia

Author(s): Al-Khathaami, A. M., Alshahrani, S. M., Kojan, S. M., Al-Jumah, M. A., Alamry, A. A., et al.

Affiliation: ^{1,3-4} *Departments of Neurology and* ⁵ *Emergency Medicine, King Abdulaziz Medical City, National Guard Health Affairs,* ² *Department of Epidemiology & Biostatistics, King Saud Bin Abdulaziz University for Health Sciences,* ⁴ *King Abdullah International Medical Research Center, Riyadh, Saudi Arabia,*

Abstract:

OBJECTIVE: To determine the degree of satisfaction and acceptance of stroke patients, their relatives, and healthcare providers toward using telestroke technology in Saudi Arabia.

METHODS: A cross-sectional study was conducted between October and December 2012 at King Abdulaziz Medical City, Ministry of National Guard Affairs, Riyadh, Saudi Arabia. The Remote Presence Robot (RPR), the RP-7i (FDA- cleared) provided by InTouch Health was used in the study. Patients and their relatives were informed that the physician would appear through a screen on top of a robotic device, as part of their clinical care. Stroke patients admitted through the emergency department, and their relatives, as well as healthcare providers completed a self-administered satisfaction questionnaire following the telestroke consultation sessions.

RESULTS: Fifty participants completed the questionnaire. Most subjects agreed that the remote consultant interview was useful and that the audiovisual component of the intervention was of high quality; 98% agreed that they did not feel shy or embarrassed during the remote interview, were able to understand the instruction of the consultant, and recommended its use in stroke management. Furthermore, 92% agreed or strongly agreed that the use of this technology can efficiently replace the physical presence of a neurologist.

CONCLUSION: Results suggest that the use of telestroke medicine is culturally acceptable among stroke patients and their families in Saudi Arabia and favorably received by healthcare providers.

Journal: Neurosciences

Year of Publication: 2015

Publication issue: 20(1):

Page numbers: 27-30

SHORTLINK: bit.ly/1Unssot

Title: Sinusoidal obstruction syndrome/veno-occlusive disease: current situation and perspectives-a position statement from the European Society for Blood and Marrow Transplantation (EBMT)

Author(s): Mohty, M., Malard, F., Abecassis, M., Aerts, E., Alaskar, A. S., et al.

Affiliation: ¹⁻²,Hôpital Saint-Antoine, and Université Pierre & Marie Curie, France; Inst Portugues Oncologia, Lisboa, Portugal; University Hospital Zurich, Switzerland; King Abdullah International Medical Research Center/King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Sinusoidal obstruction syndrome or veno-occlusive disease (SOS/VOD) is a potentially life-threatening complication of hematopoietic SCT (HSCT). This review aims to highlight, on behalf of the European Society for Blood and Marrow Transplantation, the current knowledge on SOS/VOD pathophysiology, risk factors, diagnosis and treatments. Our perspectives on SOS/VOD are (i) to accurately identify its risk factors; (ii) to define new criteria for its diagnosis; (iii) to search for SOS/VOD biomarkers and (iv) to propose prospective studies evaluating SOS/VOD prevention and treatment in adults and children.

Journal: Bone Marrow Transplantation

Year of publication: 2015

Volume: 50(6)

Page numbers: 781-789

SHORTLINK: bit.ly/1TXhxrV

Title: The Pyridone-Annulated Isoindigo (5'-Cl) Induces Apoptosis, Dysregulation of Mitochondria and Formation of ROS in Leukemic HL-60 Cells

Author(s): Saleh, A. M., El-Abadelah, M. M., Aziz, M. A., Taha, M. O., Nasr, A., et al.

Affiliation: ^{1,5} College of Medicine, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; University of Jordan, Amman, Jordan; King Abdullah International Medical Research Center, National Guard Health Affairs, Riyadh, Saudi Arabia; Faculty of Pharmacy, University of Jordan, Amman, Jordan; et al.

Abstract:

Our new compound, 5'-Br [(E)-1-(5'-bromo-2'-oxoindolin-3'-ylidene)-6-ethyl-2,3,6,9-tetrahydro-2,9-dioxo-1H-pyrrolo[3,2-f]quinoline-8-carboxylic acid], had shown strong, selective antiproliferative activity against different cancer cell lines. Here, we aim to comprehensively characterize the mechanisms associated with its cytotoxicity in the human promyelocytic leukemia HL-60 cells. We focused at studying the involvement of apoptotic pathway and cell cycle effects. 5'-Br significantly inhibited proliferation by inducing caspase-dependent apoptosis. Involvement of caspase independent mechanism is also possible due to observed inability of z-VAD-FMK to rescue apoptotic cells. 5'-Br was found to trigger intrinsic apoptotic pathway as indicated by depolarization of the mitochondrial inner membrane, decreased level of cellular ATP, modulated expression and phosphorylation of Bcl-2 leading to loss of its association with Bax, and increased release of cytochrome c. 5'-Br treated cells were found arrested at G0/G1 phase with modulation in protein levels of cyclins, dependent kinases and their inhibitors. Expression and enzymatic activity of CDK2 and CDK4 was found inhibited. Retinoblastoma protein (Rb) phosphorylation was also inhibited whereas p21 protein levels were increased. These results suggest that the antiproliferative mechanisms of action of 5'-Br could involve apoptotic pathways, dysregulation of mitochondrial functions and disruption of cell cycle checkpoint.

Journal: Cellular Physiology and Biochemistry

Year of publication: 2015

Volume: 35(5)

Page numbers: 1958-1974

SHORTLINK: bit.ly/214UdqH

Title: Malpositioned LMA confused as foreign body in nasal cavity

Author(s): Verma, S., Mehta, N., Mehta, N., Metha, S. & Verma, J.

Affiliation: ¹⁻⁴ Department of Anesthesiology, Banaras Hindu University, India; Emergency Medicine and Intensive Care Department, King Saud Bin Abdulaziz University for Health Sciences, King Abdullah International Medical Research Center, Riyadh, Saudi Arabia.

Abstract:

We present a case of confusing white foreign body in the nasal cavity detected during Endoscopic Sinus Surgery (ESS) in a 35-yr-old male which turned out to be a malposition of classic laryngeal mask airway (LMA). Although malposition of LMA is a known entity to the anesthesiologist, if ventilation is adequate, back folded LMA in nasal cavity might not be recognized by the surgeon and lead to catastrophic consequences during endoscopic sinus surgery. In principle, misfolding and malpositioning can be reduced by pre usage testing, using appropriate sizes, minimizing cuff volume, and early identification and correction of malposition.

Journal: Middle East Journal of Anesthesiology

Year of publication: 2015

Volume: 23(3)

Page numbers: 351-354

SHORTLINK: bit.ly/1Uwbhkt

Title: Almutairi's Critical Cultural Competence Model for a Multicultural Healthcare Environment

Author(s): Almutairi, A. F., Dahinten, S. & Rodney, P.

Affiliation: King Abdullah International Medical Research Centre, Riyadh, Saudi Arabia; University of British Columbia, Canada; King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

The increasing demographic changes of populations in many countries require an approach for managing the complexity of sociocultural differences. Such an approach could help healthcare organizations to address healthcare disparities and inequities, and promote cultural safety for healthcare providers and patients alike. Almutairi's critical cultural competence (CCC) is a comprehensive approach that holds great promise for managing difficulties arising from sociocultural and linguistic issues during cross-cultural interactions. CCC has addressed the limitations of many other cultural competence approaches that have been discussed in the literature. Therefore, the purpose of this study is to define the construct of CCC and the theoretical components of the CCC.

Journal: *Journal of Nursing Inquiry*.

Year of publication: 2015

Volume: 22(4)

Page numbers: 317-325

SHORTLINK: bit.ly/28hh73n

MINC-HA
Ministry of National Guard - Health Affairs

Title: Systolic Blood Pressure Response During Exercise Stress Testing: The Henry Ford Exercise Testing (FIT) Project

Author(s): O'Neal, W. T., Qureshi, W. T., Blaha, M. J., Keteyian, S. J., Al-Mallah, M. H., et al.

Affiliation: ^{1,2} Department of Internal Medicine, Wake Forest School of Medicine, Winston-Salem, NC; Johns Hopkins Ciccarone Center for the Prevention of Heart Disease, Baltimore, MD; Henry Ford Hospital, Detroit, MI; Wayne State University, Detroit, USA; King AbdulAziz Cardiac Center, Riyadh, Saudi Arabia et al.

Abstract:

Background The prognostic significance of modest elevations in exercise systolic blood pressure response has not been extensively examined.

Methods and Results We examined the association between systolic blood pressure response and all-cause death and incident myocardial infarction (MI) in 44 089 (mean age 53±13 years, 45% female, 26% black) patients who underwent exercise treadmill stress testing from the Henry Ford Exercise Testing (FIT) Project (1991–2010). Exercise systolic blood pressure response was examined as a categorical variable (>20 mm Hg: referent; 1 to 20 mm Hg, and ≤0 mm Hg) and per 1 SD decrease. Cox regression was used to compute hazard ratios (HR) and 95% CI for the association between systolic blood pressure response and all-cause death and incident MI. Over a median follow-up of 10 years, a total of 4782 (11%) deaths occurred and over 5.2 years, a total of 1188 (2.7%) MIs occurred. In a Cox regression analysis adjusted for demographics, physical fitness, and cardiovascular risk factors, an increased risk of death was observed with decreasing systolic blood pressure response (>20 mm Hg: HR=1.0, referent; 1 to 20 mm Hg: HR=1.13, 95% CI=1.05, 1.22; ≤0 mm Hg: HR=1.21, 95% CI=1.09, 1.34). A trend for increased MI risk was observed (>20 mm Hg: HR=1.0, referent; 1 to 20 mm Hg: HR=1.09, 95% CI=0.93, 1.27; ≤0 mm Hg: HR=1.19, 95% CI=0.95, 1.50). Decreases in systolic blood pressure response per 1 SD were associated with an increased risk for all-cause death (HR=1.08, 95% CI=1.05, 1.11) and incident MI (HR=1.09, 95% CI=1.03, 1.16).

Conclusions Our results suggest that modest increases in exercise systolic blood pressure response are associated with adverse outcomes.

Journal: Journal of the American Heart Association

Year of Publication: 2015

Publication issue: 4(5)

Page numbers: -

SHORTLINK: bit.ly/1svO2Ra

Title: Saudi Atrial Fibrillation Survey: National, Observational, Cross-sectional Survey Evaluating Atrial Fibrillation Management and the Cardiovascular Risk Profile of Patients With Atrial Fibrillation

Author(s): Hersi, A., Abdul-Moneim, M., Almous'ad, F., AlFaqih, A. et al.

Affiliation: King Saud University, Riyadh, Saudi Arabia; Sanofi, Riyadh, Saudi Arabia; Cardiology Department, National Guard Hospital, Riyadh, Saudi Arabia, Cardiology Department, Prince Salman Heart Center, Riyadh, Saudi Arabia; Cardiology Department, Prince Sultan Cardiac Center, Riyadh, Saudi Arabia et al.

Abstract:

Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia. The Saudi Atrial Fibrillation Survey registry was designed to provide epidemiological and clinical data on patients with AF. The registry included 400 consecutive patients who met the eligibility criteria. Control of AF at the time of the initial visit was achieved by 211 (52.75%) patients. Cardiovascular risk profile of the patients with AF was smoking 92 (23.5%), hypertension 253 (63.25%), diabetes 192 (48%), and dyslipidemia 173 (44%). Rate control was the most frequent management strategy (in 265 patients, 66.2%) whereas rhythm control was chosen in 48 (12%) patients. Both strategies were attempted in 5 (1.2%) patients. This is the first nationwide registry of patients with AF in Saudi Arabia. Compared to developed countries, our patients with AF are relatively young and have higher rates of diabetes and rheumatic heart disease. Rate control is the main strategy currently used for managing AF.

Journal: Angiology

Year of Publication: 2015

Publication issue: 66(3)

Page numbers: 244-248

SHORTLINK: bit.ly/1XDCLfe

Title: Meta-Analysis of Continuous Positive Airway Pressure as a Therapy of Atrial Fibrillation in Obstructive Sleep Apnea

Author(s): Qureshi, W. T., Nasir, U. B., Alqalyoobi, S., O'Neal, N. T. Z., ... Al-Mallah, A. H., et al. **Affiliation:** Wake Forest School of Medicine, North Carolina; University of Health Sciences, Lahore, Pakistan; University of Missouri Kansas City, Missouri; Department of Internal Medicine, Wake Forest School of Medicine, North Carolina; King Abdulaziz Cardiac Center, King Abdulaziz Medical City, Riyadh, Saudi Arabia; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Atrial fibrillation (AF) is a significant health care problem for patients with obstructive sleep apnea (OSA). Continuous positive airway pressure (CPAP) as a therapy for OSA is underused, and it is unknown if CPAP might reduce rates of AF. We systematically reviewed the published reports on CPAP use and risk of AF. MEDLINE, EMBASE, CINAHL, Web of Science, meeting abstracts, and Cochrane databases were searched from inception to June 2015. Studies needed to report the rates of AF in participants who were and were not on CPAP. Data were extracted by 2 authors. A total of 8 studies on OSA were identified (1 randomized controlled trial) with 698 CPAP users and 549 non-CPAP users. In a random effects model, patients treated with CPAP had a 42% decreased risk of AF (pooled risk ratio, 0.58; 95% confidence interval, 0.47 to 0.70; $p < 0.001$). There was low heterogeneity in the results ($I(2) = 30\%$). In metaregression analysis, benefits of CPAP were stronger for younger, obese, and male patients ($p < 0.05$). An inverse relationship between CPAP therapy and AF recurrence was observed. Results suggest that more patients with AF also should be tested for OSA.

Journal: American Journal of Cardiology

Year of Publication: 2015

Publication issue: 116(11)

Page numbers: 1767-1763

SHORTLINK: bit.ly/1Y8ygrk

Title: Bidirectional Glenn With Additional Pulmonary Blood Flow: Systematic Review and Evidence-Based Recommendations

Author(s): Alghamdi, A. A.

Affiliation: Department of Cardiac Sciences, Division of Cardiac Surgery, National Guard Health Affairs and King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Anomalies of systemic venous return are extremely heterogeneous congenital malformations with variable ranges from completely normal physiology to severe forms of right to left shunting requiring surgical treatment. Anomalous drainage of a right-sided superior vena cava (SVC) to the left atrium (LA) is one of the rarest variants of systemic venous return anomalies, characterized by right-to-left shunt physiology and cyanosis. Here we report a 2 years old girl presented with cyanosis which was observed shortly after birth by her parents but not further investigated. She is otherwise active girl and with normal growth and development. Her clinical examination was unremarkable apart from mild clubbing of the fingers and low oxygen saturation of 88–90% in room air. Her ECG and chest X-ray were unremarkable. Echocardiography showed bilateral SVC connected by a small innominate vein. The right SVC drains directly into the LA while the left SVC drains into the right atrium (RA) via a dilated coronary sinus. There is a small superior sinus venosus type atrial septum defect (ASD) with left to right shunt. Also, there is partial anomalous pulmonary venous return with right upper and right middle pulmonary veins draining directly into the right SVC, which is connected to LA. The right lower pulmonary vein and left pulmonary veins drain directly to LA. The rest of her echocardiography demonstrated normal heart structures and function. This patient was referred for surgical correction, including baffling of the right SVC to the RA and closure of the ASD. We describe this case to highlight the importance of recognizing this rare anomalous systemic venous connection as one of the very rare causes of cyanosis in the pediatric age group as well as at older age.

Journal: Journal of Cardiac Surgery

Year of Publication: 2015

Publication issue: 30(9)

Page numbers: 724-730

SHORTLINK: bit.ly/1UznggZ

Title: Cardiorespiratory fitness and risk of incident atrial fibrillation results from the Henry Ford exercise testing (FIT) project

Author(s): Qureshi, W. T., Alirhayim, Z, Blaha, M. J., Juraschek, S. P., Keteyian, S. J., ... & Al-Mallah, M. H.
Affiliation: Henry Ford Hospital/Wayne State University, Detroit, MI; Wake Forest University School of The University of Kansas Medical Center, Kansas City, KS; Johns Hopkins Ciccarone Center for the Prevention of Heart Disease, Baltimore, MD; Wayne State University, Detroit, MI; King Abdulaziz Cardiac Center, National Guard Health Affairs, Riyadh, Saudi Arabia.

Abstract:

Background: Poor cardiorespiratory fitness (CRF) is an independent risk factor for cardiovascular morbidity and mortality. However, the relationship between CRF and atrial fibrillation (AF) is less clear. The aim of this analysis was to investigate the association between CRF and incident AF in a large multi-racial cohort that underwent graded exercise treadmill testing.

Methods and Results: From 1991-2009, a total of 64,561 adults (mean age: 54.5 ± 12.7 years, 46% female, 64% whites) without AF underwent exercise treadmill testing at a tertiary-care center. Baseline demographic and clinical variables were collected. Incident AF was ascertained using international classification of diseases code v. 9 (ICD-9 427.31) confirmed via linkage to medical claim files. Nested, multivariable Cox proportional hazards models were used to estimate the independent association of CRF with incident AF. During a median follow-up of 5.4 years (IQR 3-9 years), 4,616 new cases of AF were diagnosed. After adjusting for potential confounders, a 1 higher MET achieved during treadmill testing was associated with a 7% lower risk of incident AF [HR (95% CI): 0.93 (0.92 – 0.94) $p < 0.001$]. This relationship remained significant after adjustment for incident coronary artery disease [HR (95% CI): 0.92 (0.91 – 0.93) $p < 0.001$]. The magnitude of the inverse association between CRF and incident AF was greater among obese compared with non-obese (p -interaction=0.02) individuals.

Conclusions: There is a graded, inverse relationship between cardiorespiratory fitness and incident AF. This association was stronger for obese as compared with non-obese., especially among obese patients.

Journal: Circulation

Year of Publication: 2015

Publication issue: 131(21)

Page numbers: 1827-1834

SHORTLINK: bit.ly/1TVbo9K

Title: Improving the relationship between coronary artery calcium score and coronary plaque burden: Addition of regional measures of coronary artery calcium distribution

Author(s): Tota-Maharaj, R., Al-Mallah, M. H., Nasir, K., Quresi, W. T., Blumenthal, R. S. et al.

Affiliation: ^{1,4,5} Johns Hopkins Ciccarone Center for the Prevention of Heart Disease, Baltimore, USA; Wayne State University, Detroit, MI, USA; King Abdulaziz Cardiac Center, King Abdulaziz Medical City, Riyadh, Saudi Arabia; Wake Forest University School of Medicine, USA; et al.

Abstract:

BACKGROUND: The Agatston coronary artery calcium (CAC) score predicts cardiovascular events through its association with overall burden of coronary atherosclerosis. It is unclear whether adding regional measures of CAC distribution to the Agatston score improves this association.

METHODS: We studied 920 consecutive patients (mean age 57 ± 12 , 53% female), referred for 64-slice Coronary CT angiography (CCTA) who had concomitant CAC scoring. Total atherosclerosis burden was quantified as the segment involvement score (SIS), which describes the number of coronary segments with plaque on CCTA. We studied the heterogeneity between CAC group (0, 1-100, 101-400, >400) and the number of vessels with CAC (0-4), and related this to SIS on CCTA. In patients with multi-vessel disease, we examined the relationship of concentrated vs. diffuse CAC (> or $\leq 75\%$ total CAC in one vessel) with SIS.

RESULTS: When CAC was intermediate (1-400), considerable heterogeneity was noted between CAC group and the number of vessels with CAC (CAC 1-100: 53% 1-vessel, 29% 2-vessel, 16% 3-vessel, 2% 4-vessel; CAC 101-400: 9% 1-vessel, 28% 2-vessel, 43% 3-vessel, 20% 4-vessel). Within each CAC group, increase in the number of vessels with CAC was significantly associated with increased SIS. In multi-vessel disease, a higher SIS was associated with diffuse versus concentrated CAC (CAC 1-100: 3.8 vs. 2.8, CAC 101-400: 5.5 vs. 4.3 [both $p < 0.01$]). These associations persisted after adjustment for age, gender, and the absolute Agatston CAC score ($p < 0.01$).

CONCLUSION: Addition of measures of regional CAC distribution improves the association of the Agatston CAC score with total plaque burden.

Journal: Atherosclerosis

Year of Publication: 2015

Publication issue: 238(1)

Page numbers: 126-131

SHORTLINK: bit.ly/1ZxhMHW

Title: Is Metabolic Syndrome Predictive of Prevalence, Extent, and Risk of Coronary Artery Disease beyond Its Components? Results from the Multinational Coronary CT Angiography Evaluation for Clinical Outcome: An International Multicenter Registry (CONFIRM)

Author(s): Ahmadi, A., Leipsic, J., Feuchtner, G., Gransar, H., Al-Mallah, M. et al.

Affiliation: University of British Columbia, Vancouver, Canada; ²⁻³ University of British Columbia, Vancouver, Canada; Department of Radiology, Medical University of Innsbruck, Innsbruck, Austria; Cedars-Sinai Medical Center, Los Angeles, California, USA; King Abdulaziz Cardiac Center, King Abdulaziz Medical City, Riyadh, Saudi Arabia; et al.

Abstract:

Although metabolic syndrome is associated with increased risk of cardiovascular disease and events, its added prognostic value beyond its components remains unknown. This study compared the prevalence, severity of coronary artery disease (CAD), and prognosis of patients with metabolic syndrome to those with individual metabolic syndrome components. The study cohort consisted of 27125 consecutive individuals who underwent ≥ 64 -detector row coronary CT angiography (CCTA) at 12 centers from 2003 to 2009. Metabolic syndrome was defined as per NCEP/ATP III criteria. Metabolic syndrome patients (n = 690) were matched 1:1:1 to those with 1 component (n = 690) and 2 components (n = 690) of metabolic syndrome for age, sex, smoking status, and family history of premature CAD using propensity scoring. Major adverse cardiac events (MACE) were defined by a composite of myocardial infarction (MI), acute coronary syndrome, mortality and late target vessel revascularization. Patients with 1 component of metabolic syndrome manifested lower rates of obstructive 1-, 2-, and 3-vessel/left main disease compared to metabolic syndrome patients (9.4% vs 13.8%, 2.6% vs 4.5%, and 1.0% vs 2.3%, respectively; $p < 0.05$), while those with 2 components did not (10.5% vs 13.8%, 2.8% vs 4.5% and 1.3% vs 2.3%, respectively; $p > 0.05$). At 2.5 years, metabolic syndrome patients experienced a higher rate of MACE compared to patients with 1 component (4.4% vs 1.6%; $p = 0.002$), while no difference observed compared to individuals with 2 components (4.4% vs 3.2% $p = 0.25$) of metabolic syndrome. In conclusion, metabolic syndrome patients have significantly greater prevalence, severity, and prognosis of CAD compared to patients with 1 but not 2 components of metabolic syndrome.

Journal: Plos One

Year of Publication: 2015

Publication issue: 10(3)

Page numbers: e0118998

SHORTLINK: bit.ly/1Yea47m

Title: Impact of a Nurse-Led Heart Failure Program on All-Cause Mortality

Author(s): Bdeir, B., Conboy, T., Muchtar, A., Omer, H., Odeh, R., et al.

Affiliation: ¹⁻⁵ King Abdulaziz Cardiac Center, King Abdulaziz Medical City, National Guard Health Affairs, Riyadh, Saudi Arabia; et al.

Abstract:

BACKGROUND: Nurse-led heart failure programs (HFPs) have been shown to reduce readmissions and improve medication adherence rates. However, their impact on survival is not well demonstrated.

OBJECTIVE: The purpose of this study was to evaluate the impact of a nurse-led HFP on all-cause mortality.

METHODS: This retrospective review included 413 consecutive patients who were admitted with heart failure exacerbations in 2008 and 2009. All patients were invited to attend a nurse-led HFP; 199 (48%) patients agreed and were compared with the 214 (52%) who chose usual care. Patients were followed for all-cause mortality, which was confirmed by the national death index. Independent predictors of outcomes were identified using multivariable Cox regression.

RESULTS: Patients followed in the HFP were younger, more often men with lower ejection fraction, blood urea nitrogen, and systolic blood pressure. After a median follow-up of 15 months (range, 6-30 months), a total of 55 patients died: 14 in the HFP group (7%) compared with 41 patients (19%) in the usual care group. Participation in the HFP was independently associated with reduction in all-cause mortality (hazard ratio, 0.4; 95% confidence interval, 0.2-0.8; P = .008).

CONCLUSIONS: Our nurse-led HFP was independently associated with improved survival among patients with decompensated heart failure. Further research is required to confirm this finding.

Journal: Journal of Cardiovascular Nursing

Year of Publication: 2015

Publication issue: 30(2)

Page numbers: E7-E14.

SHORTLINK: bit.ly/1Od0lqc

Title: Complex congenital heart disease in a complicated and precious pregnancy

Author(s): Elsherif, Z., Mahmood, N., Jamil, S. & Wagas, H.

Affiliation: ¹⁻² King Abdul Aziz Medical City for National Guard, Riyadh, Saudi Arabia; ³⁻⁴ Department of Obstetrics and Gynecology, King Abdul Aziz Medical City for National Guard, Riyadh, Saudi Arabia.

Abstract:

A single ventricle is a rare congenital heart disease that accounts for less than 1% of all congenital heart diseases. A woman was assessed in our obstetric clinic for the first time at the gestational age of 28 weeks and found to have placental bleeding. She also had complex congenital heart disease and atrial fibrillation requiring anticoagulation. Echocardiography revealed double-inlet single ventricle with right and left atrioventricular valves entering into this chamber and levo-transposition of the great arteries. After an extensive discussion with the patient regarding the risks and benefits of anticoagulation including risk of stroke, the agreed plan was to start her on intravenous heparin with close observation and to continue pregnancy for at least 32 weeks in order to reduce the postpartum risk for the fetus. The pregnancy progressed without any further complications and the patient had elective caesarean section at 33 weeks of gestation and delivered a healthy baby boy.

Journal: BMJ Case Reports 2015.

Year of Publication: 2015

Publication issue:

Page numbers:

SHORTLINK: bit.ly/1TYrHrH

Title: An Increasing Population with Metabolic Syndrome and/or Diabetes Mellitus in the Middle East—Is There an Added Value of Coronary Calcium Scoring to Myocardial Perfusion Imaging?

Author(s): Al-Mallah, M. H. & Aljizeeri, A.

Affiliation: Ministry of National Guard-Health Affairs, King AbdulAziz Cardiac Center, Riyadh, Saudi Arabia; King Abdulaziz Medical City (Riyadh), National Guard Health Affairs, King Abdulaziz Cardiac Center, Riyadh, Saudi Arabia.

Abstract:

The population of the Middle East is a growing population characterized by increasing prevalence of metabolic syndrome, diabetes, and obesity. Both myocardial perfusion imaging (MPI) and coronary artery calcification (CAC) have a well-validated role in the diagnosis and prognosis of coronary artery disease (CAD). In the recent years, adding CAC score to myocardial perfusion imaging has been associated with incremental diagnostic and prognostic value. The aim of this paper is to review the diagnostic and prognostic value of adding CAC score to nuclear MPI in the Middle Eastern patients in the face of increasing prevalence of metabolic syndrome and CAD risk factors. Since limited local data are available from the Middle East, this review will focus on reports on similar cohorts from the western world.

Journal: Current Cardiovascular Imaging Reports

Year of Publication: 2015

Publication issue: 8

Page numbers:

SHORTLINK: bit.ly/217gKmE

Title: Vitamin D Deficiency and Cardiometabolic Risks: A Juxtaposition of Arab Adolescents and Adults

Author(s): Al-Daghri, N. M., Al-Saleh, Y., Aljohani, N., Alokail, M., ... Al-Harbi, M., et al.

Affiliation: ¹⁻⁴ Prince Mutaib Chair for Biomarkers of Osteoporosis, College of Science, King Saud University, Riyadh, Saudi Arabia; Specialized Diabetes and Endocrine Center, King Fahad Medical City, Diabetes Centers and Units Administration, Ministry of Health, Riyadh, Saudi Arabia; et al.

Abstract:

The recent exponential surge in vitamin D research reflects the global epidemic of vitamin D deficiency and its potential impact on several chronic diseases in both children and adults. Several subpopulations, including Arab adolescent boys and girls, remain understudied. This study aims to fill this gap. A total of 2225 apparently healthy Saudi adolescents (1187 boys and 1038 girls, aged 13-17 years old) and 830 adults (368 men and 462 women, aged 18-50 years old) were respectively recruited from different public schools and medical practices within Riyadh, Saudi Arabia. Anthropometrics were taken and fasting blood samples withdrawn to examine serum glucose and lipid profile by routine analysis and 25-hydroxyvitamin D by ELISA. Almost half of the girls (47.0%) had vitamin D deficiency as compared to only 19.4% of the boys ($p < 0.001$), 36.8% of the adult women and 17.7% of the adult men ($p < 0.001$). Furthermore, in boys there were more significant inverse associations between serum 25(OH)vitamin D levels and cardiometabolic indices than girls, while in contrast women had more significant associations than men. Vitamin D deficiency was significantly associated with diabetes mellitus type 2 (DMT2) [OR 3.47 (CI 1.26-5.55); $p < 0.05$] and pre-DM [OR 2.47 (CI 1.48-4.12); $p < 0.01$] in boys. Furthermore, vitamin D insufficiency was significantly associated with abdominal obesity in boys [OR 2.75 (CI 1.1-7.1); $p < 0.05$]. These associations for DMT2 and abdominal obesity were not observed in adult males, girls and adult women. Vitamin D deficiency/insufficiency and hyperglycemia is high among Arab adolescents. Vitamin D deficiency is mostly associated with cardiometabolic risk factors in adolescent Arab boys. This indicates a sex- and age-related disadvantage for boys with low vitamin D status and challenges the extra-skeletal protection of vitamin D correction in adolescent females.

Journal: Plos One

Year of Publication: 2015

Publication issue: 10(7)

Page numbers: e0131315

SHORTLINK: bit.ly/217gKmE

Title: Spontaneous resolution of plastic bronchitis in a patient post hemi-Mustard/bidirectional Glenn atrial switch procedure in the double-switch operation for congenitally corrected transposition of great arteries after course of Augmentin

Author(s): Fararjeh, M., Najm, H. & Tamimi, O.

Affiliation: Division of Pediatric Cardiology, Department of Cardiac Sciences, King Abdulaziz Cardiac Center, National Guard Hospital, Riyadh; Division of Cardiac Surgery, Department of Cardiac Sciences, King Abdulaziz Cardiac Center, National Guard Hospital, Riyadh, Saudi Arabia.

Abstract:

We report the case of a five-year-old girl with plastic bronchitis after repaired complex congenital heart disease, who became asymptomatic after a short course of Augmentin. We report the disease regression as response either to antibiotic or as coincidental with spontaneous resolution.

Journal: Journal of the Saudi Heart Association

Year of Publication: 2015

Publication issue: 27(1)

Page numbers: 54-56

SHORTLINK: bit.ly/1Uzpu01

Title: Relationships between dental appearance, self-esteem, socio-economic status, and oral health-related quality of life in UK schoolchildren: A 3-year cohort study

Author(s): Benson, P. E., Da'as, T., Johal, A., Mandall, N. A., Willians, A. C., et al.

Affiliation: School of Clinical Dentistry, Sheffield, UK; King Abdulaziz National Guard Hospital, Alhasa, Saudi Arabia; Institute of Dentistry, Barts and the London School of Medicine and Dentistry, Queen Mary University of London; Tameside General Hospital, Lancashire; Bromley and Wimbledon, London; et al.

Abstract:

OBJECTIVES:

To examine the relationships between dental appearance, characteristics of the individual and their environment, and oral health-related quality of life (OHQoL) in young people over time.

METHODS:

A total of 374 young people (122 boys, 252 girls) aged 11-12 years from seven different XX schools were recruited at baseline and 258 (78 boys, 180 girls) followed-up 3 years later, aged 14-15 years (69 per cent response rate). Participants completed a measure of OHQoL (CPQ11-14 ISF-16) and self-esteem (SE, CHQ-CF87). A clinical examination was undertaken, including clinician and self-assessed normative measures of need [Index of Orthodontic Treatment Need (IOTN)] and dental caries. The Index of Multiple Deprivation was used to indicate socio-economic status (SES).

RESULTS:

There was a general improvement between baseline and follow-up in the measures of malocclusion, as well as OHQoL. Multiple linear regression indicated that there were significant cross-sectional associations at baseline between OHQoL and SES ($\rho = -0.11$; $P = 0.006$), SE ($\rho = -0.50$; $P < 0.001$), and self-assessed IOTN ($\rho = 0.27$; $P < 0.001$). There were significant longitudinal associations between the change in OHQoL and change in SE ($\rho = -0.46$; $P < 0.001$) and change in the decayed, missing, or filled surfaces ($\rho = -0.24$; $P = 0.001$). The mean improvement in the total CPQ11-14 ISF-16 score for those with a history of orthodontic treatment was 3.2 (SD = 6.9; $P = 0.009$) and 2.4 (SD = 8.8; $P < 0.001$) for those with no history of treatment. The difference was not statistically significant ($P = 0.584$).

CONCLUSIONS:

OHQoL improved in young people over time, whether they gave a history of orthodontic treatment or not. Individual and environmental characteristics influence OHQoL and should be taken into account in future studies.

Journal: European Journal of Orthodontics

Year of Publication: 2015

Publication issue: 37(5)

Page numbers: 481-490

SHORTLINK: bit.ly/1Yeal4E

Title: Gorlin-Goltz Syndrome

Author(s): Divakaran, R., Ranjit, L. & Joseph , B.

Affiliation: King Hamad University Hospital, Bahrain; Dental Department National Guard Hospital Dammam, Saudi Arabia; Department of Diagnostic Sciences Faculty of Dentistry, Kuwait University, Kuwait.

Abstract:

Gorlin-Goltz Syndrome (GGS) is known as nevoid basal cell carcinoma syndrome (NBCCS); it is a rare condition with multi-organ involvement. It has an autosomal dominant trait with complete penetrance and variable expressivity. The condition presents with a wide range of pathological features including malignancy of the skin (basal cell carcinoma); its early diagnosis is vital. Odontogenic Keratocyst (OKC) being one of the prominent features and mostly an early one, the dental specialty most often is in a position to identify this condition first. We present a case of GGS in a fourteen-year-old male. Enucleation was performed and the postoperative period was uneventful. Histopathologically, the diagnosis was confirmed as multiple Odontogenic Keratocyst. The patient had spina bifida at D2 vertebra, fused anterior end of right 5th and 6th ribs, fused right anterior 2nd and 3rd ribs, Falx and tentorial calcification and Sprengel shoulder. It is essential to emphasize the role of the dental specialty in diagnosing and instituting early treatment of such condition.

Journal: Bahrain Medical Bulletin

Year of publication: 2015

Volume: 37(3)

Page numbers: 195-197

SHORTLINK: bit.ly/1Yeal4E

Title: Orofacial Granulomatosis

Author(s): Al-Hamad, A., Porter, S. & Fedele, S.

Affiliation: ¹⁻³ Oral Medicine Unit, UCL Eastman Dental Institute, University College London, London, UK;
¹ Dental Services, Ministry of National Guard, King Abdulaziz Medical City, Riyadh, Riyadh, Saudi Arabia.

Abstract:

Orofacial granulomatosis (OFG) is an uncommon chronic inflammatory disorder of the orofacial region. It is characterized by subepithelial noncaseating granulomas and has a spectrum of possible clinical manifestations ranging from subtle oral mucosal swelling to permanent disfiguring fibrous swelling of the lips and face. Etiopathogenesis is unknown. A range of systemic granulomatous disorders, including Crohn disease and sarcoidosis, may cause orofacial manifestations that cannot be distinguished from those of OFG. Treatment of OFG has proven difficult and unsatisfactory, with no single therapeutic model showing consistent efficacy in reducing orofacial swelling and mucosal inflammation.

Journal: Dermatologic Clinics

Year of publication: 2015

Volume: 33(3)

Page numbers: 433+

SHORTLINK: bit.ly/25LQeTc

Title: Neurophobia among medical students

Author(s): Abulaban, A. A., Obeid, T. H., Algahtani, H. A., Kojan, S. M., Al-Khathaaami, A. M., et al.

Affiliation: ¹⁻⁵ Neurology Division, Department of Medicine, King Abdulaziz Medical City, National Guard Health Affairs, Riyadh, Saudi Arabia; et al.

Abstract:

OBJECTIVE: To assess the attitude of medical students and junior physicians toward neurology.

METHODS: A self-administered, previously validated, questionnaire was distributed among 422 students and junior physicians at King Abdulaziz University, Jeddah, Saudi Arabia from September to December 2012. In this cross-sectional study, the questionnaire included demographic data and 12 statements to examine attitudes toward neurology using a Likert scale.

RESULTS: The response rate among participants was 70.3%. The mean age was 22.35 (SD+/-1.28) years. Males comprised 46.2%. While 31.3% of students had not decided regarding their future career, 11.8% selected neurology as their first possible choice. Whereas 29.6% of students were not satisfied with their neurology teaching experience, 84.4% found neurology difficult, and 42.7% of the whole group thought that their neuroscience knowledge was insufficient. Advanced clinical year students (namely, interns) were less likely to consider neurology as a career choice ($p=0.001$).

CONCLUSION: Most of the students had an unfavorable attitude toward neurology on the Likert scale. New strategies are needed to change students' attitude toward this demanding specialty.

Journal: Neurosciences

Year of Publication: 2015

Publication issue: 20(1)

Page numbers: 37-40

SHORTLINK: bit.ly/22OQAq9

Title: Evaluation of Urology Residents' Perception of Surgical Theater Educational Environment

Author(s): Binsaleh, S., Babaeer, A., Rabah, D. & Madbouly, K.

Affiliation: Faculty of Medicine, King Saud University, Riyadh, Saudi Arabia; Department of Urology, King Abdulaziz Medical City, Riyadh, Saudi Arabia; Faculty of Medicine, King Saud University, Riyadh, Saudi Arabia; Department of Urology, Prince Mohammed bin Abdulaziz Hospital, Riyadh, Saudi Arabia.

Abstract:

PURPOSE: To evaluate surgical theater learning environment perception in urology residents in Saudi Arabia and to investigate association of learning environment perception and stages of residency program, sectors of health care system, and regions of Saudi Arabia.

DESIGN: A cross-sectional survey using the surgical theater educational environment measure (STEEM) inventory.

SETTINGS AND PARTICIPANTS: The STEEM inventory was used to measure theater learning environment perception of urology residents in Saudi Arabia. Respondents' perception was compared regarding different residency stages, sectors of the health care system, and regions of Saudi Arabia. Internal reliability of the inventory was assessed using the Cronbach α coefficient. Correlation analysis was done using the Spearman ρ coefficient.

RESULTS: Of 72 registered residents, 33 (45.8%) completed the questionnaire. The residents perceived their environment less than acceptable (135.9 ± 16.7 , 67.95%). No significant differences in perception were found among residents of different program stages, different sectors of health care system, or different regions in Saudi Arabia. Residents from the eastern region perceived the training and teaching domain better ($p = 0.025$). The inventory showed a high internal consistency with a Cronbach α of 0.862.

CONCLUSIONS: STEEM survey is an applicable and reliable instrument for assessing the learning environment and training skills of urology residency program in Saudi Arabia. Urology residents in Saudi Arabia perceived the theater learning environment as less than ideal. The perceptions of theater learning environment did not change significantly among different stages of the program, different sectors of health care system, or different training regions of Saudi Arabia assuring the uniformity of urology training all over Saudi Arabia. The training programs should address significant concerns and pay close attention to areas in surgical theater educational environment, which need development and enhancement, mainly planned fashion of training, supportive supervision and hospital environment, and proper coverage and management of workloads.

Journal: Journal of Surgical Education

Year of Publication: 2015

Publication issue: 72(1)

Page numbers: 73-79

SHORTLINK: bit.ly/1TYtuNq

Title: Learning styles and satisfaction with educational activities among paediatric physicians at King Abdulaziz Medical City Jeddah

Author(s): Al Shaikh, A.

Affiliation: Pediatric Department, King Abdulaziz Medical City, King Saud bin Abdulaziz University for Health Sciences, Jeddah, Saudi Arabia.

Abstract:

Objectives: Few studies have evaluated the degree of satisfaction of paediatricians with the academic instructional methods and the association of that satisfaction with their learning styles (LSs). The purpose of this research was to determine the correlation between paediatricians' LSs and their satisfaction with different instructional strategies.

Methods: This cross-sectional descriptive study was conducted at the Pediatric Department of King Abdulaziz Medical City (KAMC)-Jeddah, Saudi Arabia (KSA). The instruments used in the survey were the David Kolb LS inventory and a modified student satisfaction survey based on a similar survey from Mott Community College in Flint, Michigan. A self-administered questionnaire was administered using LSs and demographic data as the predictor variables. The satisfaction level of the physicians was considered the outcome variable.

Results: A total of 75 paediatricians were included in this study (mean age 36 _ 8.9 years, 52% males). Overall, no single predominant LS was reported; an approximately equal distribution of LSs was observed among the paediatricians. The satisfaction scores of the paediatricians showed that they were generally satisfied; however, the mean satisfaction score for education was only 68%. No correlation was found between LS types and the degree of satisfaction with instructional methods.

Conclusions: No single predominant LS was observed among the paediatricians of KAMC-Jeddah. The respondents showed an average level of satisfaction with the educational strategies. There were no correlations between the different LS types and the paediatricians' degrees of satisfaction with the instructional methods used. The results of this study suggest that the preparation of an educational training program may not require the consideration of LS. Further studies exploring the high level of dissatisfaction with instructional methods in paediatricians are recommended.

Journal: Journal of Taibah University Medical Sciences

Year of Publication: 2015

Publication issue: 10(1)

Page numbers: 102-108

SHORTLINK: bit.ly/1UeFEzY

Title: Arbovirus infections of the nervous system: current trends and future threats

Author(s): Wasay, M., Khatri, I. A. & Abd-Allah, F.

Affiliation: Department of Medicine, Aga Khan University, Karachi, Pakistan; Department of Medicine, King Abdulaziz Medical City, National Guard Health Affairs, Riyadh, Saudi Arabia; Department of Neurology, Cairo University, Egypt.

Abstract:

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Journal: Neurology

Year of Publication: 2015

Publication issue: 84(4)

Page numbers: 421-423

SHORTLINK: bit.ly/1svPy5Z

Title: Thrombolytic therapy at systemic lupus onset with secondary antiphospholipid syndrome: A rare stroke experience

Author(s): Loharia, J. J., Alam, J. M., Abdehadi, H. A. & Marei, T. F.

Affiliation: ¹⁻² Department of Internal Medicine-ICU, Department of Internal Medicine-Neurology, Department of Medical Imaging, Imam Abdulrahman Binfaisal Hospital, National Guard Health Affairs, Dammam, Saudi Arabia.

Abstract:

Strokes are a major cause of disability in systemic lupus erythematosus (SLE). Classical neurological manifestations are rare at onset. The use of thrombolytic therapy improves clinical outcome in eligible stroke patients who present early. Modern imaging modalities augment decision making. This 37-year-old woman presented with an acute stroke with National Institute of Health stroke scale 10. The CT showed a hyperdense middle cerebral artery (MCA) dot sign. The magnetic resonance angiography revealed focal thromboembolic occlusion at the insular MCA segment (M2). Intravenous recombinant tissue plasminogen activator (rtPA) was administered with successful recanalization. The present case was a rare event for rtPA use in acute MCA occlusion with underlying latent lupus. Acute vascular event thrombolysis as the presenting manifestation of autoimmune disease has not previously been encountered on literature review. Stroke pathophysiology in conditions of hypercoagulability is a significant clinical entity where the implication for thrombolytic use requires further studies. An ischemic stroke with underlying connective tissue disease benefits from timely multimodal brain imaging and should be considered for reperfusion.

Journal: Neurosciences

Year of Publication: 2015

Publication issue: 20(1)

Page numbers: 55-60

SHORTLINK: bit.ly/1rcL1UM

Title: Tuberculous conjunctivitis in an anophthalmic socket

Author(s): Al Habash, A., Malik, F., Al Abdulsalaam, O. & Al Abdulsalaam, A.

Affiliation: Department of Ophthalmology, University of Dammam, Saudi Arabia; Department of Ophthalmology, King Abdulaziz Hospital, National Guard Health Affairs, Al Ahsa, Saudi Arabia; Department of Pathology, King Faisal University, Al Ahsa, Saudi Arabia.

Abstract:

Tuberculous (TB) conjunctivitis was not an uncommon condition before the early 20th century but is currently a rare occurrence, especially in the developed countries. We report a 27-year-old Saudi female who underwent enucleation of the right eye at the age of 20 following a penetrating eye injury. She had a history of miliary TB that was treated at the age of 22. She was presented with chronic purulent discharge from her right an anophthalmic socket for 2 months. Cultures for bacteria and fungi were sterile. There was no response to empirical topical antibiotics and steroids. Direct microscopic examination of conjunctival scrapings with the Ziehl–Neelsen staining revealed no microorganisms. Histopathological examination revealed epithelioid granulomas. Polymerase chain reaction was negative for *Mycobacterium tuberculosis* DNA. TB conjunctivitis was suspected from the history of miliary TB and presence of epithelioid granulomas. The definitive diagnosis was made after prompt resolution of the ocular signs with no recurrence only after systemic anti-TB therapy.

Journal: Middle East African Journal of Ophthalmology

Year of Publication: 2015

Publication issue: 22(4)

Page numbers: 525-527

SHORTLINK: bit.ly/1UeFBEj

Title: Acute cutaneous zygomycosis of the scalp: A case report and literature review

Author(s): Alseady, A. & Baharoon, S.

Affiliation: ¹⁻² Department of Medicine, King Abdulaziz Medical City, Riyadh, Saudi Arabia.

Abstract:

Cutaneous zygomycosis is the third most common form of zygomycosis. However, scalp involvement is rare for this disease. In this study, we present a case of acute zygomycosis in a diabetic patient who was effectively treated with local debridement, amphotericin B lipid complex and posaconazole.

Journal: Journal of Infection and Public Health

Year of Publication: 2015

Publication issue: 8(4)

Page numbers: 377-381

SHORTLINK: bit.ly/1Y8ABCy

Title: Risk of obstructive sleep apnea among Saudis with chronic renal failure on hemodialysis

Author(s): Wali, S. O., Alkhouli, A., Howlader, M., Ahmad, I., Alshohaid, S. et al.

Affiliation: ^{1,3-4} Department of Medicine, King Abdulaziz University Hospital, Jeddah, Saudi Arabia; Faculty of Science, King Abdulaziz University, Jeddah, Saudi Arabia; Renal Unit, Department of Medicine, King Abdulaziz University Hospital, Jeddah, Saudi Arabia; et al.

Abstract:

AIM:

The prevalence of obstructive sleep apnea (OSA) in end-stage renal disease (ESRD) patients was reported to be 10-fold that in the general population. OSA can worsen the clinical symptoms and cardiovascular complications of ESRD. We aimed to investigate the prevalence of symptoms and risk of OSA among Saudi patients with ESRD.

SETTINGS AND DESIGN:

This multi-center, cross-sectional study was conducted in Jeddah, Saudi Arabia, between June 2012 and September 2013.

METHODS:

The prevalence of OSA was assessed using the Berlin questionnaire. The presence of daytime sleepiness was evaluated using the Epworth sleepiness scale. Data were also collected on the medical history, clinical, and laboratory findings of participants.

RESULTS:

In all, 355 patients (61% male) were enrolled (mean age: 45.5 ± 15.4 years). The overall prevalence of high-risk of OSA was 44.2% (males, 47.3%; females, 44.8%; $P = 0.65$). The prevalence of excessive daytime sleepiness (EDS) was 74%. Controlling for age, gender and body mass index, multivariate analysis revealed that hypertension and hepatitis C infection were the only comorbidities significantly associated with OSA (odds ratio [OR]: 3.827 and 0.559; confidence interval [CI]: 2.120-6.906 and 0.324-0.964; $P < 0.0001$ and 0.036, respectively). OSA was also strongly associated with EDS (OR: 3.054; CI: 1.676-5.565; $P < 0.0001$).

CONCLUSIONS:

In Saudi Arabia, the risk of OSA is more common in ESRD patients than in the general population. OSA is strongly associated with EDS. Interestingly, a significant negative correlation between OSA and hepatitis C infection was noted, which warrants further investigation.

Journal: Annals of Thoracic Medicine

Year of Publication: 2015

Publication issue: 10(4)

Page numbers: 263-268

SHORTLINK: bit.ly/1TYsGrR

Title: The effect of vitamin D supplements on the severity of restless legs syndrome

Author(s): Wali, S., Shukr, A., Boudal, A., Alsaiani, A., Krayem, A. & Wali, S.

Affiliation: ¹⁻⁴ Sleep Medicine and Research Center, King Abdulaziz University, Jeddah, Saudi Arabia; Sleep Disorders Center, King Abdulaziz Medical City, Jeddah, Saudi Arabia; King Abdulaziz University Sleep Medicine and Research Center King Abdulaziz University Hospital, Jeddah, Saudi Arabia.

Abstract:

Purpose: Clinical observation hinted improved symptoms of restless legs syndrome (RLS) after vitamin D supplements. Hence, the aim of this study is to evaluate the effect of vitamin D supplementation on the severity of RLS symptoms.

Methods: Twelve adult subjects diagnosed with primary RLS and vitamin D deficiency were recruited. Patients with secondary RLS were excluded from this study. The complete cell count; serum levels of ferritin, iron, glycosylated hemoglobin, and vitamin D3 (25 (OH) vitamin D); and renal and bone profiles of the patients were assayed. Patients with vitamin D deficiency (50 nmol/l and compared with those before the administration of the supplements.

Results: The median pretreatment vitamin D level was 21.7 nmol/l (13.45–57.4), which improved to 61.8 nmol/l (42.58–95.9) ($P=0.002$) with the treatment. The median RLS severity score improved significantly from 26 (15–35) at baseline to 10 (0–27) after correction of the vitamin D levels ($P=0.002$).

Conclusion: This study indicates that vitamin D supplementation improves the severity of RLS symptoms and advocates that vitamin D deficiency is conceivably associated with RLS.

Journal: Sleep and Breathing

Year of Publication: 2015

Publication issue: 19(2)

Page numbers: 579-583

SHORTLINK: bit.ly/1YebWNI

Title: Low- versus high-fidelity simulations in teaching and assessing clinical skills

Author(s): Munshi, F., Lababidi, H. & Alyousef, S.

Affiliation: Medical Education Department, College of Medicine, King Fahad Medical City, King Saud bin Abdulaziz University, Riyadh, Saudi Arabia; CRESENT, King Fahad Medical City, Riyadh, Saudi Arabia; Pediatric Intensive Care Department, Children Hospital, CRESENT, King Fahad Medical City, Riyadh, Saudi Arabia.

Abstract:

Simulation has been widely used in the education of healthcare workers. In simulation training, there is an approximation to reality in which trainees are supposed to react to problems or conditions as they would under genuine circumstances. The educational value of simulations has been determined to be valuable. Simulation has a significant impact on health care education across the disciplines and in both undergraduate and postgraduate studies. Recent development in technologies permits the reproduction of real-life scenarios with acceptable fidelity, thus profoundly enhancing the learning environment. However, the educational outcomes of high- versus low fidelity simulations remain controversial. This article aims to review the effectiveness of low- and high-fidelity simulations in teaching and assessing clinical skills.

Journal: Journal of Taibah University Medical Sciences

Year of Publication: 2015

Publication issue: 10(1)

Page numbers: 12-15

SHORTLINK: bit.ly/1VLZyDF

Title: Non-high-density lipoprotein cholesterol and other lipid indices vs elevated glucose risk in Arab adolescents

Author(s): Al-Daghri, N. M., Aljohani, N. J., Al-Attas, O. S., Al-Saleh, Y., Wani, K., et al.

Affiliation: ^{1,3,5} Biomarkers Research Program Biochemistry Department, College of Science, King Saud University, King Saud University, Riyadh, Saudi Arabia; ² Specialized Diabetes and Endocrine Center, College of Medicine, King Fahad Medical City and King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; ^{2,4} Biochemistry Department, Prince Mutaib Chair for Biomarkers of Osteoporosis, King Saud University, Riyadh, Saudi Arabia.

Abstract:

Background

Non-high-density lipoprotein cholesterol (non-HDL-C) has been identified as a significant predictor of various cardiovascular events in adults. Limited studies have been conducted in the pediatric population with diverse results, depending on ethnic origin. None has been conducted in the Arabic adolescent population so far; this study aims to fill this gap.

Methods

In this cross-sectional study, 1690 Saudi school adolescents (968 boys [mean age 14.8 ± 1.7] and 722 girls [mean age 14.6 ± 1.7]) were recruited. Anthropometrics were obtained. Fasting blood glucose and lipid profiles were quantified routinely. Non-HDL-C was calculated and screening was done for dyslipidemia using cutoffs obtained from the cohort and elevated fasting glucose.

Results

Using the 90th percentile cutoff obtained, the overall prevalence of high non-HDL-C (≥ 4.26 mmol/L) was 10.1%. Prevalence was slightly higher in girls (10.5%) than boys (9.9%). Non-HDL-C was similar to other lipids in terms of significant associations with anthropometric measures and glucose in both boys and girls. Elevated triglycerides was most predictive of elevated glucose in both girls (odds ratio 2.41; confidence interval 1.43–4.08; $P = .001$) and boys (odds ratio 2.61; confidence interval 1.70–4.0); $P < .001$.

Conclusion

Non-HDL-C appears to be gender-specific and is cardiometabolically more associated with Saudi boys, despite higher levels in girls. It is inferior compared with triglycerides in assessing elevated glucose risk. Further investigations may provide a more definite value for non-HDL-C use as a biomarker in assessing cardiometabolic risk in the Arab adolescent population.

Journal: Journal of Clinical Lipidology

Year of Publication: 2015

Publication issue: 9(1)

Page numbers: 35-41

SHORTLINK: bit.ly/1Y8Bb3e

Title: Characteristics of pediatric ulcerative colitis in Saudi Arabia: a multicenter national study

Author(s): AlSaleem, K., El Mouzan, M. I., AlSaleem, B., Al_Husaini, A., Hassosa, M., et al.

Affiliation: ¹⁻² King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia; King Saud University, Riyadh Saudi Arabia; ⁴⁻⁵ Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia; King Abdulaziz Medical City, National Guard Hospital, Jeddah, Saudi Arabia; et al.

Abstract:

BACKGROUND:

Despite the extensive reporting of pediatric ulcerative colitis (UC) from industrialized developed countries, reports from developing countries are limited to small-case series from single centers. The objective of our large multicenter study was to determine the clinical, laboratory, endoscopic characteristics of UC in children from a developing country, Saudi Arabia.

DESIGN AND SETTINGS:

A retrospective study of children diagnosed with UC under the age of 18 years during the period from 2003 to 2012.

METHODS:

Patients enrolled from 15 medical centers from different regions in Saudi Arabia. A unified database collection form specifically designed for this study was completed by all participating centers.

RESULTS:

A total of 188 children were diagnosed with UC during the study period (97 males [51.6%] and 91 females [48.4%]). The mean age at diagnosis was 9.1 years, and the mean duration of symptoms before diagnosis was 8.7 months. Consanguinity was present in 57 cases (32.6%), and the family history of inflammatory bowel disease (IBD) was noted in 16 cases (9%). The most common clinical presentation was blood in stool (90%), followed by diarrhea (86%) and abdominal pain (62%). Laboratory investigations revealed elevated erythrocyte sedimentation rate (82%), anemia (75%), thrombocytosis (72%), and hypoalbuminemia (33%). The extent of the disease was pan colonic in 46.1%, and confined to left side of colon and rectum in 23% and 9.6% of the cases, respectively.

CONCLUSION:

This demographically pediatric IBD retrospective study revealed age-related variation in the distribution of IBD. Clinical presentation, with a high prevalence of positive consanguinity and positive family history, was noted in young patients with UC. The data from this study indicate that UC is increasingly recognized in Saudi Arabia and show many similarities to data from North America and Europe.

Journal: Annals of Saudi Medicine

Year of Publication: 2015

Publication issue: 35(1)

Page numbers: 19-22

SHORTLINK: bit.ly/1Ph9ZZ3

Title: Physician job satisfaction in Saudi Arabia: insights from a tertiary hospital survey

Author(s): Aldrees, T., Al-Eissa, S., Badri, M., Aljuhayman, A. & Zamakhshary, M.

Affiliation: Medical College, Prince Sattam Bin Abdulaziz University, Alkharj, Saudi Arabia; National Guard Hospital, Riyadh, Saudi Arabia; King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; National Guard Hospital, Saudi Arabia; Alfaisal University, Riyadh, Saudi Arabia.

Abstract:

BACKGROUND AND OBJECTIVES:

Job satisfaction refers to the extent to which people like or dislike their job. Job satisfaction varies across professions. Few studies have explored this issue among physicians in Saudi Arabia. The objective of this study is to determine the level and factors associated with job satisfaction among Saudi and non-Saudi physicians.

METHODS:

In this cross-sectional study conducted in a major tertiary hospital in Riyadh, a 5-point Likert scale structured questionnaire was used to collect data on a wide range of socio-demographic, practice environment characteristics and level and consequences of job satisfaction from practicing physicians (consultants or residents) across different medical specialties. Logistic regression models were fitted to determine factors associated with job satisfaction.

RESULTS:

Of 344 participants, 300 (87.2%) were Saudis, 252 (73%) males, 255 (74%) married, 188 (54.7%) consultants and age [median (IQR)] was 32 (27-42.7) years. Overall, 104 (30%) respondents were dissatisfied with their jobs. Intensive care physicians were the most dissatisfied physicians (50%). In a multiple logistic regression model, income satisfaction (odds ratio [OR]=0.448 95% CI 0.278-0.723, P < .001) was the only factor independently associated with dissatisfaction.

CONCLUSION:

Factors adversely associated with physicians job satisfaction identified in this study should be addressed in governmental strategic planning aimed at improving the healthcare system and patient care.

Journal: Annals of Saudi Medicine

Year of Publication: 2015

Publication issue: 35(3)

Page numbers: 210-213

SHORTLINK: bit.ly/1UeG1L6

Title: Quality of life, depression, adherence to treatment and illness perception of patients on haemodialysis

Author(s): Nabolsi, M. M., Wardam, L. & Al-Halabi, J. O.

Affiliation: ¹⁻² Clinical Nursing Department, Faculty of Nursing, University of Jordan, Amman, Jordan; College of Nursing, Jeddah King Saud bin Abdulaziz University for Health Sciences, National Guard, Jeddah, Saudi Arabia.

Abstract:

The purpose of this study was to explore the relationship between quality of life, depression, perception of seriousness of illness and adherence to treatment among Jordanian patients with end stage renal disease on maintenance haemodialysis. The study was carried out using a descriptive, correlation design. A convenience sample of 244 participants was recruited from four major dialysis units in Amman. A self-report questionnaire included demographic data, adherence to treatment and perception of seriousness of illness. Quality of Life Index and Beck Depression Inventory were used for data collection. There was a negative correlation between quality of life and depression ($r = -0.05$, $P = 0.000$). Depression was higher among women than men, whereas both gender had low quality of life scores. Higher quality of life has been associated with perceived seriousness of illness and more adherence to treatment regimen. This study provides preliminary evidence to develop culturally sensitive nursing strategies to assess and manage depression, enhance quality of life and adherence to treatment of patients on haemodialysis.

Journal: International Journal of Nursing Practice

Year of Publication: 2015

Publication issue: 21(1)

Page numbers: 1-10

SHORTLINK: bit.ly/25LArXT

Title: Saudi practical guidelines on biologic treatment of psoriasis

Author(s): Hamadah, I. R., Al Raddadi, A. A., Bahamdan, K. A., Fatani, M. I., ... Al Rakban, A. M., et al.

Affiliation: King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia; King Abdulaziz Medical City, Jeddah, Saudi Arabia; King Khalid University, Abha, Saudi Arabia; Hera General Hospital, Makkah, Saudi Arabia; King Abdulaziz Medical City National Guard, Riyadh, Saudi Arabia,

Abstract:

The current treatment of psoriasis patients with biologic agents in the Saudi Arabia (KSA) is mainly based on clinical experience. Although there are published international guidelines for treatment with biologics, such as the European S3 guidelines (a joint project of the European Dermatology Forum, the European Academy of Dermatology and Venereology, and the International Psoriasis Council), many nations have found it beneficial to develop country-based guidelines that incorporate specific regional aspects of therapy (legal and practical). With the expanded role of biologic agents in the treatment of psoriasis in Saudi Arabia, a need for local Saudi guidelines has become evident. Here we present a practical approach to the evidence-based clinical administration of biologics for professionals who treat patients with psoriasis.

Journal: Journal of Dermatological Treatment

Year of Publication: 2015

Publication issue: 26(3)

Page numbers: 223-229

SHORTLINK: bit.ly/1XDJAxo

Title: Presence of Middle East respiratory syndrome coronavirus antibodies in Saudi Arabia: a nationwide, cross-sectional, serological study

Author(s): Muller, M. A., Meyer, B., Corman, V. M., Al-Masri, M., Turkestani, A., et al.

Affiliation: ¹⁻³ Institute of Virology, University of Bonn Medical Centre, Bonn, Germany; ⁴ Ministry of Health, Riyadh, Saudi Arabia; ⁵ Makkah Regional Health Affairs, Ministry of Health, Makkah, Saudi Arabia; et al.

Abstract:

Background

Scientific evidence suggests that dromedary camels are the intermediary host for the Middle East respiratory syndrome coronavirus (MERS-CoV). However, the actual number of infections in people who have had contact with camels is unknown and most index patients cannot recall any such contact. We aimed to do a nationwide serosurvey in Saudi Arabia to establish the prevalence of MERS-CoV antibodies, both in the general population and in populations of individuals who have maximum exposure to camels.

Methods

In the cross-sectional serosurvey, we tested human serum samples obtained from healthy individuals older than 15 years who attended primary health-care centres or participated in a national burden-of-disease study in all 13 provinces of Saudi Arabia. Additionally, we tested serum samples from shepherds and abattoir workers with occupational exposure to camels. Samples were screened by recombinant ELISA and MERS-CoV seropositivity was confirmed by recombinant immunofluorescence and plaque reduction neutralisation tests. We used two-tailed Mann Whitney *U* exact tests, χ^2 , and Fisher's exact tests to analyse the data.

Findings

Between Dec 1, 2012, and Dec 1, 2013, we obtained individual serum samples from 10 009 individuals. Anti-MERS-CoV antibodies were confirmed in 15 (0.15%; 95% CI 0.09–0.24) of 10 009 people in six of the 13 provinces. The mean age of seropositive individuals was significantly younger than that of patients with reported, laboratory-confirmed, primary Middle Eastern respiratory syndrome (43.5 years [SD 17.3] vs 53.8 years [17.5]; $p=0.008$). Men had a higher antibody prevalence than did women (11 [0.25%] of 4341 vs two [0.05%] of 4378; $p=0.028$) and antibody prevalence was significantly higher in central versus coastal provinces (14 [0.26%] of 5479 vs one [0.02%] of 4529; $p=0.003$). Compared with the general population, seroprevalence of MERS-CoV antibodies was significantly increased by 15 times in shepherds (two [2.3%] of 87, $p=0.0004$) and by 23 times in slaughterhouse workers (five [3.6%] of 140; $p<0.0001$).

Journal: Lancet Infectious Diseases

Year of Publication: 2015

Publication issue: 15(5)

Page numbers: 559-564

SHORTLINK: bit.ly/1UopMqG

Title: Disparities in Health Care Delivery and Hospital Outcomes between Non-Saudis and Saudi Nationals Presenting with Acute Coronary Syndromes in Saudi Arabia

Author(s): AlFaleh, H. F., Al Shamiri, M. Q., Ullah, M. O., Alhabib, K. F., Hersi, A. S., et al.

Affiliation: ¹⁻⁵ Cardiac Sciences Department, College of Medicine, King Saud University, Riyadh, Saudi Arabia; et al.

Abstract:

Background

Saudi Arabia has a non-Saudi workers population. We investigated the differences and similarities of expatriate non-Saudi patients (NS) and Saudi nationals (SN) presenting with acute coronary syndromes (ACS) with respect to therapies and clinical outcomes.

Methods

The study evaluated 2031 of the 5055 ACS patients enrolled in the Saudi Project for Assessment of Acute Coronary Syndrome (SPACE) from 2005 to 2007. Propensity score matching and logistic regression analysis were performed to account for major imbalances in age and sex in the two groups.

Results

The mean patient age was 56.2 ± 9.8 , and 83.5% of the study cohort were male. SN were more likely to have risk factors of atherosclerosis. ST-elevation MI (STEMI) was the most common ACS presentation in NS, while non-ST ACS was more common in SN. The median symptom-to-door time was significantly greater in NS patients (Median 175 min (197) vs. 130 min (167), $p=0.027$). The only difference in pharmacological therapies between the two groups was that NS were more likely to receive fibrinolytic therapy. NS were less likely than SN to undergo percutaneous coronary interventions (PCI; 32.6% vs. 42.8%, $p=0.0001$) or primary PCI (7.8% vs. 22.8%, $p<0.001$). Hospital mortality, cardiogenic shock, and heart failure were significantly higher in NS compared to SN. After adjusting for baseline variables and therapies, the odds ratios for hospital mortality and cardiogenic shock in NS were 2.9 (95% CI 1.5–6.2, $p=0.004$) and 2.8 (95% CI 1.5–4.9, $p<0.001$), respectively.

Conclusion

Our findings indicate disparities in hospital care between NS and SN ACS patients. NS patients had worse hospital outcomes, which may reflect unequal health coverage and access-to-care issues.

Journal: Plos One

Year of Publication: 2015

Publication issue: 10(4)

Page numbers:

SHORTLINK: bit.ly/1WEz2wX

Title: Dairy products consumption and serum 25-hydroxyvitamin D level in Saudi children and adults

Author(s): Al-Daghri, N. M., Al-Attas, O., Yakouts, S. Aljohani, N., Al-Fawas, H., et al.

Affiliation: ¹⁻³ Prince Mutaib Chair for Biomarkers of Osteoporosis, College of Science, King Saud University Riyadh, Saudi Arabia; College of Medicine, King Abdulaziz Medical City, Riyadh, Saudi Arabia; College of Food Science and Agriculture, King Saud University Riyadh; Saudi Arabia, et al.

Abstract:

Vitamin D deficiency is a global health threat that has been associated with several chronic diseases. Selenium is an essential trace element because of role in major metabolic processes, immune function, thyroid hormone metabolism, male infertility, neoplasms and cardiovascular disease. We aimed to investigate for the first time in the Saudi population the association between vitamin D and selenium status with various dietary products consumption. A total of 259 children and 95 adults were included in this cross-sectional study. We estimated the consumption frequencies of various dietary food products using a qualitative food frequency questionnaire (FFQ) and also measured serum levels of 25-hydroxyvitamin D and selenium. Associations between variables of interest were assessed. Vitamin D deficiency and insufficiency were observed in 80% of the boys, 90% of the girls, 64% of men and 50% of women. Modest associations were found between mean serum 25 (OH) D concentration and consumption frequencies of fresh milk in children ($r=0.11$; $P<0.05$), more specifically in girls ($r=0.12$; $P<0.05$), and to the overall consumption of dairy products in women ($r=0.12$; $P<0.05$). Vitamin D status was also inversely associated with selenium in adults ($r=-0.43$; $P<0.05$). There was a significant correlation between delta changes of serum selenium, triglycerides and HDL levels (P -values <0.05). Vitamin D and selenium levels are modestly associated with dietary products consumption. Changes in selenium levels were associated with increased serum triglyceride levels, indicating a potential biomarker for cardiovascular risk and dyslipidemia. The widespread vitamin D deficiency observed in the present study highlight the need for adequate fortification of dairy products.

Journal: International Journal of Clinical and Experimental Pathology

Year of publication: 2015

Volume: 8(7)

Page numbers: 8480-8486

SHORTLINK: bit.ly/1Uc3H2I

Title: Clinical manifestations that predict abnormal brain computed tomography (CT) in children with minor head injury

Author(s): Alharthy, N., Al Queflie, S., Alyousef, K. & Yunus F.

Affiliation: Department of Emergency Medicine and Department of Pediatrics, King Abdulaziz Medical City, Ministry of National Guard Health Affairs, Riyadh, Saudi Arabia; College of Medicine, King Abdulaziz Bin Saud University for Health Sciences, Riyadh, Saudi Arabia; College of Public Health and Health Informatics, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Objectives: The aim of this study is to find a reliable clinical alternative to detect an intracranial injury without resorting to the CT.

Materials and Methods: Retrospective cross-sectional study was undertaken in patients (1-14 years) with blunt head injury and having a Glasgow Coma Scale (GCS) of 13-15 who had CT performed on them. Using statistical analysis, the correlation between clinical examination and positive CT manifestation is analyzed for different age-groups and various mechanisms of injury.

Results: No statistically significant association between parameters such as Loss of Consciousness, 'fall' as mechanism of injury, motor vehicle accidents (MVA), more than two discrete episodes of vomiting and the CT finding of intracranial injury could be noted. Analyzed data have led to believe that GCS of 13 at presentation is the only important clinical predictor of intracranial injury.

Conclusion: Retrospective data, small sample size and limited number of factors for assessing clinical manifestation might present constraints on the predictive rule that was derived from this review. Such limitations notwithstanding, the decision to determine which patients should undergo neuroimaging is encouraged to be based on clinical judgments. Further analysis with higher sample sizes may be required to authenticate and validate findings.

Journal: Journal of Emergencies, Trauma and Shock

Year of Publication: 2015

Publication issue: 8(2)

Page numbers: 88-93

SHORTLINK: bit.ly/1YciUCy

Title: Middle East Respiratory Syndrome: Knowledge to Date

Author(s): Alsolamy, S.

Affiliation: Emergency Medicine and Critical Care, King Abdulaziz Medical City, Riyadh, Saudi Arabia; College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

OBJECTIVE: To provide a conceptual and clinical review of Middle East respiratory syndrome.

DATA SOURCES: Peer-reviewed articles were identified through searches of PubMed using the terms "Middle East respiratory syndrome," "coronavirus respiratory illness in Saudi Arabia," and "novel (beta) coronavirus and human coronavirus Erasmus Medical Center". In addition, articles were searched on the websites of the World Health Organization and the U.S. Centers for Disease Control and Prevention using the terms "Middle East respiratory syndrome" and "novel coronavirus in Middle East." The reference lists of these articles and relevant review articles were also reviewed.

STUDY SELECTION AND DATA EXTRACTION: Final references were selected for inclusion in the review on the basis of their relevance.

DATA SYNTHESIS: The emerging Middle East respiratory syndrome coronavirus causes severe pulmonary disease with multiorgan involvement and a high fatality rate. Within months after its emergence, Middle East respiratory syndrome coronavirus was reported in several countries worldwide in people who had traveled from the Middle East. Middle East respiratory syndrome coronavirus is considered a zoonotic virus that has crossed the species barrier to humans, but the pathogenesis and the routes of transmission are not completely understood. There is currently no recommended treatment for Middle East respiratory syndrome coronavirus, although supportive treatment has played an important role.

CONCLUSIONS: This syndrome has raised global public health concerns about the dissemination of an emerging infectious disease and highlights the need for a coordinated global response to contain such a disease threat.

Journal: Critical Care Medicine

Year of Publication: 2015

Publication issue: 43(6)

Page numbers: 1283-1290

SHORTLINK: bit.ly/1tglU4n

Title: Public awareness of the EMS system in Western Saudi Arabia: identifying the weakest link

Author(s): Hamam, A. F., Bagis, M. H., AlJohani, K. & Tashkandi, A. H.

Affiliation: Emergency Department, King AbdulAziz Medical City, Jeddah, Saudi Arabia; Emergency Department, King Fahad Medical City, Riyadh, Saudi Arabia; Emergency Department, Prince Mohammad Bin AbdulAziz Medical Center, Madinah, Saudi Arabia; McMaster University, Hamilton, Canada.

Abstract:

Background: The City of Jeddah is the major and largest city in the Western Region of the Saudi Arabia (KSA). Covering a total area of 748 km². The Saudi Red Crescent Organization (SRC) makes up the major bulk of the Emergency Medical Service (EMS) system in the Kingdom. We have set out to investigate the level of public awareness of the EMS system in place in Western KSA.

Method: This study was an observational cross-sectional study that was done by interviewing the public in public venues. The survey consisted of a two part questionnaire. The first part was completed for all subjects. The second part was completed only for those subjects that had previous experience with the SRC service.

Result: A total of 1534 subjects were interviewed by 5 data collectors. 33% of people did not know the emergency dispatcher number to call in case of a medical emergency. The majority estimated the ETA of an ambulance response to their home to be about 30 minutes or more. 94 % said that MEDEVAC is needed. 17.7 % of people still find it unacceptable for male paramedics to respond to a female emergency unescorted by a male family member.

Conclusion: It is clear that the general public is aware of the deficit in EMS coverage that is present. To improve the public awareness of the EMS system, municipal, legislative, public guidance, as well as religious support, are needed to be utilized to improve the community's satisfaction and quality of care.

Journal: International Journal of Emergency Medicine

Year of Publication: 2015

Publication issue: 8(1)

Page numbers: -

SHORTLINK: bit.ly/1t8pz4w

Title: In Situ Medical Simulation Investigation of Emergency Department Procedural Sedation With Randomized Trial of Experimental Bedside Clinical Process Guidance Intervention

Author(s): Siegel, N. A., Kobayashi, L., Dunbar-Viveiros, J. A., Devine, J., Al-Rasheed, R. S., et al.

Affiliation: Alpert Medical School and School of Engineering, Brown University; Lifespan Medical Simulation Center, Rhode Island Hospital, Providence, RI; College of Nursing, University of Massachusetts; USA; King Abdulaziz Medical City, National Guard Health Affairs, Riyadh, Saudi Arabia; et al.

Abstract:

INTRODUCTION:

Patient safety during emergency department procedural sedation (EDPS) can be difficult to study. Investigators sought to delineate and experimentally assess EDPS performance and safety practices of senior-level emergency medicine residents through in situ simulation.

METHODS:

Study sessions used 2 pilot-tested EDPS scenarios with critical action checklists, institutional forms, embedded probes, and situational awareness questionnaires. An experimental informatics system was separately developed for bedside EDPS process guidance. Postgraduate year 3 and 4 subjects completed both scenarios in randomized order; only experimental subjects were provided with the experimental system during second scenarios.

RESULTS:

Twenty-four residents were recruited into a control group ($n = 12$; 6.2 ± 7.4 live EDPS experience) and experimental group ($n = 12$; 11.3 ± 8.2 live EDPS experience [$P = 0.10$]). Critical actions for EDPS medication selection, induction, and adverse event recognition with resuscitation were correctly performed by most subjects. Presedation evaluations, sedation rescue preparation, equipment checks, time-outs, and documentation were frequently missed. Time-outs and postsedation assessments increased during second scenarios in the experimental group. Emergency department procedural sedation safety probe detection did not change across scenarios in either group. Situational awareness scores were $51\% \pm 7\%$ for control group and $58\% \pm 12\%$ for experimental group. Subjects using the experimental system completed more time-outs and scored higher Simulation EDPS Safety Composite Scores, although without comprehensive improvements in EDPS practice or safety.

CONCLUSIONS:

Study simulations delineated EDPS and assessed safety behaviors in senior emergency medicine residents, who exhibited the requisite medical knowledge base and procedural skill set but lacked some nontechnical skills that pertain to emergency department microsystem functions and patient safety. The experimental system exhibited limited impact only on in-simulation time-out compliance.

Journal: Journal of the Society for Simulation in Healthcare

Year of Publication: 2015

Publication issue: 10(3)

Page numbers: 146-153

SHORTLINK: bit.ly/1t8pj5C

Title: Ultrasound credentialing in North American emergency department systems with ultrasound fellowships: a cross-sectional survey

Author(s): Bellamkonda, V. R., Shokoohi, H., Alsaawi, A., Ding, R., Cambell, R. L., et al.

Affiliation: ^{1,5} Mayo Clinic College of Medicine, Minnesota, USA; George Washington University, Washington DC, USA; ³ King Abdulaziz Medical City, Riyadh, Saudi Arabia; George Washington University, Washington DC, USA; et al.

Abstract:

OBJECTIVE: To describe the credentialing systems of North American emergency department systems (EDS) with emergency ultrasound (EUS) fellowship programmes.

METHODS: This is a prospective, cross-sectional, survey-based study of North American EUS fellowships using a 62-item, pilot-tested, web-based survey instrument assessing credentialing and training systems. The American College of Emergency Physicians (ACEP) distributed the surveys using SNAP survey (Snap Surveys Ltd, Portsmouth, New Hampshire, USA).

RESULTS: Over 6 months, 75 eligible programmes were surveyed, 55 responded (73% response rate); 1 declined to participate leaving 54 participating programmes. Less than 20% of EDS credential nurses, physician assistants, nurse practitioners and students in EUS. Respondent EDS reported having an average of 4.2 ± 3.3 ultrasound faculty members (faculty identifying their career focus as EUS). The median number of annual point-of-care ultrasounds reported was 5000 (IQR 3000-8000). 30 EDS (56%) credential each examination individually and 48 EDS (89%) use ACEP credentialing criteria. 61% of fellowship leadership believe their credentialing system is either satisfactory or very satisfactory (Cronbach's coefficient $\alpha=0.84$).

CONCLUSIONS: The data show heterogeneity among North American EDS with EUS fellowship programmes with regard to credentialing systems despite published guidelines from the ACEP and Canadian Emergency Ultrasound Society.

Journal: Emergency Medicine Journal

Year of Publication: 2015

Publication issue: 32(10)

Page numbers: 804-808

SHORTLINK: bit.ly/1TYtTPT

Title: Reliability of Canadian Emergency Department Triage and Acuity Scale (CTAS) in Saudi Arabia

Author(s): Alquraini, M., Awad, E. & Hijazi, R.

Affiliation: Critical Care Medicine Program, Faculty of Health Sciences, McMaster University, Hamilton, Canada; ²⁻³ Department of Emergency Medicine, King Abdulaziz Medical City for National Guard Health Affairs, Riyadh, Saudi Arabia.

Abstract:

Background: The Canadian Emergency Department Triage and Acuity Scale (CTAS) is an integral part of the Canadian emergency medicine triaging system. There is growing interest and implementation of CTAS worldwide. However, little is known about its reliability outside Canada. The aim of this study was to determine the reliability agreement of CTAS in a tertiary care emergency center in Saudi Arabia. **Methods:** Ten triage nurses (five senior and five junior nurses) utilized CTAS guidelines to independently assign a triage level for 160 real case-based scenarios. Quadratic weighted kappa statistics were used to measure raters' agreements. **Results:** Raters provided 1600 triage category assignments to case scenarios for analysis. Intra-rater agreement was similar for both senior and junior nurses; for senior nurses (SN1) kappa 0.871 95 % CI (0.840–0.897), and for junior nurses (SN2) kappa 0.871 95 % CI (0.839–0.898). Inter-rater agreement for the SN1 versus SN2 nurses had statistically meaningful agreement across different triage levels (weighted kappa = 0.770) 95 % CI (0.742–0.797).

Conclusions: CTAS has good reliability among emergency department (ED) triage nurses in King Abdulaziz Medical City (KAMC), Saudi Arabia. The findings suggest that CTAS might be a reliable instrument when applied in countries outside Canada.

Journal: International Journal of Emergency Medicine

Year of Publication: 2015

Publication issue: 8(1)

Page numbers: -

SHORTLINK: bit.ly/1YciUCy

Title: Correlation between Genetic Variations and Serum Level of Interleukin 28B with Virus Genotypes and Disease Progression in Chronic Hepatitis C Virus Infection

Author(s): Al-Qahtani, A., Al-Anazi, M., Abdo, A. A., Sanai, F. M. Al-Houdi, W. et al.

Affiliation: Research Center, King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia; Liver Disease Research Center, King Saud University, Riyadh, Saudi Arabia; College of Medicine, King Saud University, Riyadh, Saudi Arabia; Department of Medicine, King Abdulaziz Medical City, Jeddah, Saudi Arabia; et al.

Abstract:

Recent studies have demonstrated that polymorphisms near the interleukin-28B (IL-28B) gene could predict the response to Peg-IFN- α /RBV combination therapy in HCV-infected patients. The aim of the study was to correlate the serum level of IL28B in HCV-infected patients with virus genotype/subgenotype and disease progression. IL28B serum level was detected and variations at five single nucleotide polymorphisms (SNPs) in IL28B gene region were genotyped and analyzed. The variation of IL28B genetic polymorphisms was found to be strongly associated with HCV infection when healthy control group was compared to HCV-infected patients with all values <0.0001 . Functional analysis revealed that subjects carrying rs8099917-GG genotype had higher serum level of IL28B than those with GT or TT genotypes. Also, patients who were presented with cirrhosis (Cirr) only or with cirrhosis plus hepatocellular carcinoma (Cirr+HCC) had higher levels of serum IL28B when compared to chronic HCV-infected patients (and 0.003, resp.). No significant association was found when serum levels of IL28B were compared to virus genotypes/subgenotypes. This study indicates that variation at SNP rs8099917 could predict the serum levels of IL28B in HCV-infected patients. Furthermore, IL28B serum level may serve as a useful marker for the development of HCV-associated sequelae.

Journal: Journal of Immunology Research.

Year of Publication: 2015

Publication issue: 2015

Page numbers: -

SHORTLINK: bit.ly/1UeJcSQ

Title: Comparison of HOMA-IR, HOMA-beta% and disposition index between US white men and Japanese men in Japan: the ERA JUMP study

Author(s): Ahuja, V., Kadowaki, T., Evans, R. W., Kadota, A., Okamuri, T. ... El-Saed, A. et al.

Affiliation: University of Pittsburgh, Pittsburgh, USA; Shiga University of Medical Science, Japan; University of Pittsburgh, Pittsburgh, USA; School of Medicine, Keio University, Tokyo, Japan; Infection Prevention and Control Department, King Abdulaziz Medical City, Riyadh, Saudi Arabia.

Abstract:

Aims

At the same level of BMI, white people have less visceral adipose tissue (VAT) and are less susceptible to developing type 2 diabetes than Japanese people. No previous population-based studies have compared insulin resistance and insulin secretion between these two races in a standardized manner that accounts for VAT. We compared HOMA-IR, HOMA of beta cell function (HOMA-β%) and disposition index (DI) in US white men and Japanese men in Japan.

Methods

We conducted a population-based, cross-sectional study, comprising 298 white men and 294 Japanese men aged 40–49 years without diabetes. Insulin, glucose, VAT and other measurements were performed at the University of Pittsburgh. We used ANCOVA to compare geometric means of HOMA-IR, HOMA-β% and DI, adjusting for VAT and other covariates.

Results

White men had higher HOMA-IR, HOMA-β% and DI than Japanese men, and the difference remained significant ($p < 0.01$) after adjusting for VAT (geometric mean [95% CI]): 3.1 (2.9, 3.2) vs 2.5 (2.4, 2.6), 130.8 (124.6, 137.3) vs 86.7 (82.5, 91.0), and 42.4 (41.0, 44.0) vs 34.8 (33.6, 36.0), respectively. Moreover, HOMA-IR, HOMA-β% and DI were significantly higher in white men even after further adjustment for BMI, impaired fasting glucose and other risk factors.

Conclusions/interpretation

The higher VAT-adjusted DI in white men than Japanese men may partly explain lower susceptibility of white people than Japanese people to developing type 2 diabetes. The results, however, should be interpreted with caution because the assessment of insulin indices was made using fasting samples and adjustment was not made for baseline glucose tolerance. Further studies using formal methods to evaluate insulin indices are warranted.

Journal: Diabetologia

Year of Publication: 2015

Publication issue: 58(2)

Page numbers: 265-271

SHORTLINK: bit.ly/1TYutNJ

Title: The present and future disease burden of hepatitis C virus infections with today's treatment paradigm - volume 3

Author(s): Sibley, A., Han, K. H. Abourached, A, Lesmana, L. A., ..., Aljumah, A. A., et al.

Affiliation: Center for Disease Analysis, Louisville, USA; Yonsei University College of Medicine, Seoul, Korea; Ministry of Public Health, Beirut, Lebanon; University of Indonesia, Jakarta, Indonesia; King Abdulaziz Medical City and King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

The total number, morbidity and mortality attributed to viraemic hepatitis C virus (HCV) infections change over time making it difficult to compare reported estimates from different years. Models were developed for 15 countries to quantify and characterize the viraemic population and forecast the changes in the infected population and the corresponding disease burden from 2014 to 2030. With the exception of Iceland, Iran, Latvia and Pakistan, the total number of viraemic HCV infections is expected to decline from 2014 to 2030, but the associated morbidity and mortality are expected to increase in all countries except for Japan and South Korea. In the latter two countries, mortality due to an ageing population will drive down prevalence, morbidity and mortality. On the other hand, both countries have already experienced a rapid increase in HCV-related mortality and morbidity. HCV-related morbidity and mortality are projected to increase between 2014 and 2030 in all other countries as result of an ageing HCV-infected population. Thus, although the total number of HCV countries is expected to decline in most countries studied, the associated disease burden is expected to increase. The current treatment paradigm is inadequate if large reductions in HCV-related morbidity and mortality are to be achieved.

Journal: Journal of Viral Hepatitis

Year of Publication: 2015

Publication issue: 22

Page numbers: 21-41

SHORTLINK: bit.ly/1PHjFBC

Title: The Risk of Nosocomial Transmission of Rift Valley Fever

Author(s): Al-Hamdan, N. A., Panackal, A. A., Al Balssam, T. H., Alrabea, A., Al Hamzi, M., et al.

Affiliation: Faculty of Medicine, King Fahad Medical City, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Centers for Disease Control and Prevention; Atlanta, Georgia, USA; Hafr Albatin Health Region, Hafr Albatin, Saudi Arabia; College of Medicine, Imam University, Riyadh, Saudi Arabia; King Fahad Central Hospital, Jazan Saudi Arabia; et al.

Abstract:

In 2000, we investigated the Rift Valley fever (RVF) outbreak on the Arabian Peninsula—the first outside Africa—and the risk of nosocomial transmission. In a cross-sectional design, during the peak of the epidemic at its epicenter, we found four (0.6%) of 703 healthcare workers (HCWs) IgM seropositive but all with only community-associated exposures. Standard precautions are sufficient for HCWs exposed to known RVF patients, in contrast to other viral hemorrhagic fevers (VHF) such as Ebola virus disease (EVD) in which the route of transmission differs. Suspected VHF in which the etiology is uncertain should be initially managed with the most cautious infection control measures.

Journal: PLoS Neglected Tropical Diseases

Year of Publication: 2015

Publication issue: 9(12)

Page numbers:

SHORTLINK: bit.ly/1VM1zzC

Title: Strategies to manage hepatitis C virus infection disease burden - volume 3

Author(s): Alfaleh, F. Z., Nugrahini, N., Maticic, M., Tolmane, I., ... Alswat, K. A., et al.

Affiliation: King Saud University, Riyadh, Saudi Arabia; Ministry of Health, Jakarta, Indonesia; University Medical Centre, Ljubljana, Slovenia; Infectology Center of Latvia, Riga, Latvia; King Abdulaziz Medical City and King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

The hepatitis C virus (HCV) epidemic was forecasted through 2030 for 15 countries in Europe, the Middle East and Asia, and the relative impact of two scenarios was considered: increased treatment efficacy while holding the annual number of treated patients constant and increased treatment efficacy and an increased annual number of treated patients. Increasing levels of diagnosis and treatment, in combination with improved treatment efficacy, were critical for achieving substantial reductions in disease burden. A 90% reduction in total HCV infections within 15 years is feasible in most countries studied, but it required a coordinated effort to introduce harm reduction programmes to reduce new infections, screening to identify those already infected and treatment with high cure rate therapies. This suggests that increased capacity for screening and treatment will be critical in many countries. Birth cohort screening is a helpful tool for maximizing resources. Among European countries, the majority of patients were born between 1940 and 1985. A wider range of birth cohorts was seen in the Middle East and Asia (between 1925 and 1995).

Journal: Journal of Viral Hepatitis

Year of Publication: 2015

Publication issue: 22

Page numbers: 42-65

SHORTLINK: bit.ly/1UeJ2er

Title: 2014 MERS-CoV Outbreak in Jeddah - A Link to Health Care Facilities

Author(s): Oboho, I. K., Tomczyk, S. M., Al-Asmari, A. M., Banjar, A. A., ..., Al-Mugti, H. et al.

Affiliation: ¹⁻² Centers for Disease Control; ³⁻⁴ Ministry of Health, Community and Preventive Medicine Center, National Guard Health Affairs, Western Region; Ministry of National Guard, Riyadh, Saudi Arabia, et al.

Abstract:

BACKGROUND

A marked increase in the number of cases of Middle East respiratory syndrome coronavirus (MERS-CoV) infection occurred in Jeddah, Saudi Arabia, in early 2014. We evaluated patients with MERS-CoV infection in Jeddah to explore reasons for this increase and to assess the epidemiologic and clinical features of this disease.

METHODS

We identified all cases of laboratory-confirmed MERS-CoV infection in Jeddah that were reported to the Saudi Arabian Ministry of Health from January 1 through May 16, 2014. We conducted telephone interviews with symptomatic patients who were not health care personnel, and we reviewed hospital records. We identified patients who were reported as being asymptomatic and interviewed them regarding a history of symptoms in the month before testing. Descriptive analyses were performed.

RESULTS

Of 255 patients with laboratory-confirmed MERS-CoV infection, 93 died (case fatality rate, 36.5%). The median age of all patients was 45 years (interquartile range, 30 to 59), and 174 patients (68.2%) were male. A total of 64 patients (25.1%) were reported to be asymptomatic. Of the 191 symptomatic patients, 40 (20.9%) were health care personnel. Among the 151 symptomatic patients who were not health care personnel, 112 (74.2%) had data that could be assessed, and 109 (97.3%) of these patients had had contact with a health care facility, a person with a confirmed case of MERS-CoV infection, or someone with severe respiratory illness in the 14 days before the onset of illness. The remaining 3 patients (2.7%) reported no such contacts. Of the 64 patients who had been reported as asymptomatic, 33 (52%) were interviewed, and 26 of these 33 (79%) reported at least one symptom that was consistent with a viral respiratory illness.

CONCLUSIONS

The majority of patients in the Jeddah MERS-CoV outbreak had contact with a health care facility, other patients, or both. This highlights the role of health care-associated transmission.

Journal: New England Journal of Medicine

Year of Publication: 2015

Publication issue: 372(9)

Page numbers: 846-854

SHORTLINK: bit.ly/1Y8DT8P

Title: Historical epidemiology of hepatitis C virus (HCV) in select countries - volume 3

Author(s): Liakina, V., Hamid, S., Tanaka, J., Olafsson, S., ..., Altraif, I., et al.

Affiliation: Vilnius University, Vilnius, Lithuania; The Aga Khan University, Karachi, Pakistan; Hiroshima University Institute of Biomedical and Health Sciences, Hiroshima, Japan; National University Hospital of Iceland, Iceland; King Abdulaziz Medical City and King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Detailed, country-specific epidemiological data are needed to characterize the burden of chronic hepatitis C virus (HCV) infection around the world. With new treatment options available, policy makers and public health officials must reconsider national strategies for infection control. In this study of 15 countries, published and unpublished data on HCV prevalence, viraemia, genotype, age and gender distribution, liver transplants and diagnosis and treatment rates were gathered from the literature and validated by expert consensus in each country. Viraemic prevalence in this study ranged from 0.2% in Iran and Lebanon to 4.2% in Pakistan. The largest viraemic populations were in Pakistan (7 001 000 cases) and Indonesia (3 187 000 cases). Injection drug use (IDU) and a historically unsafe blood supply were major risk factors in most countries. Diagnosis, treatment and liver transplant rates varied widely between countries. However, comparison across countries was difficult as the number of cases changes over time. Access to reliable data on measures such as these is critical for the development of future strategies to manage the disease burden.

Journal: Journal of Viral Hepatitis

Year of publication: 2015

Volume: 22

Page numbers: 4-20

SHORTLINK: bit.ly/1tgJ3og

Title: Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013

Author(s): Vos, T., Barber, R. M., Bell, B., Bertozzi-Villa, A., ... Alhabib, S. et al.

Affiliation: Institute for Health Metrics and Evaluation, Seattle, USA; National Guard Health Affairs, Riyadh, Saudi Arabia; Global Burden of Disease Study 2013 Collaborators

Abstract:

Background: Up-to-date evidence about levels and trends in disease and injury incidence, prevalence, and years lived with disability (YLDs) is an essential input into global, regional, and national health policies. In the Global Burden of Disease Study 2013 (GBD 2013), we estimated these quantities for acute and chronic diseases and injuries for 188 countries between 1990 and 2013.

Methods: Estimates were calculated for disease and injury incidence, prevalence, and YLDs using GBD 2010 methods with some important refinements. Results for incidence of acute disorders and prevalence of chronic disorders are new additions to the analysis. Key improvements include expansion to the cause and sequelae list, updated systematic reviews, use of detailed injury codes, improvements to the Bayesian meta-regression method (DisMod-MR), and use of severity splits for various causes. An index of data representativeness, showing data availability, was calculated for each cause and impairment during three periods globally and at the country level for 2013. In total, 35 620 distinct sources of data were used and documented to calculate estimates for 301 diseases and injuries and 2337 sequelae. The comorbidity simulation provides estimates for the number of sequelae, concurrently, by individuals by country, year, age, and sex. Disability weights were updated with the addition of new population-based survey data from four countries.

Findings: Disease and injury were highly prevalent; only a small fraction of individuals had no sequelae. Comorbidity rose substantially with age and in absolute terms from 1990 to 2013. Incidence of acute sequelae were predominantly infectious diseases and short-term injuries, with over 2 billion cases of upper respiratory infections and diarrhoeal disease episodes in 2013, with the notable exception of tooth pain due to permanent caries with more than 200 million incident cases in 2013. Conversely, leading chronic sequelae were largely attributable to non-communicable diseases, with prevalence estimates for asymptomatic permanent caries and tension-type headache of 2.4 billion and 1.6 billion, respectively. The distribution of the number of sequelae in populations varied widely across regions, with an expected relation between age and disease prevalence. YLDs for both sexes increased from 537.6 million in 1990 to 764.8 million in 2013 due to population growth and ageing, whereas the age-standardised rate decreased little from 114.87 per 1000 people to 110.31 per 1000 people between 1990 and 2013. ...

Journal: Lancet

Year of publication: 2015

Volume: 386(9995)

Page numbers: 743-800

SHORTLINK: bit.ly/1TVeGdj

Title: Changes in the prevalence of influenza-like illness and influenza vaccine uptake among Hajj pilgrims: A 10-year retrospective analysis of data

Author(s): Alfelali, M., Barasheed, O., Tashani, M., Azeem, M. I., El Bashir, H., et al.

Affiliation: Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia; King Abdullah Medical City, Makkah, Saudi Arabia; ³⁻⁴ Sydney Medical School, University of Sydney, Australia; Al Maha Children Unit, Hamad Medical Corporation, Doha, Qatar, et al.

Abstract:

Background

Influenza is an important health hazard among Hajj pilgrims. For the last ten years, pilgrims are being recommended to take influenza vaccine before attending Hajj. Vaccination coverage has increased in recent years, but whether there has been any change in the prevalence of influenza-like illness (ILI) is not known. In this analysis, we examined the changes in the rate of ILI against seasonal influenza vaccine uptake among Hajj pilgrims over the last decade.

Method

Data for this analysis is a synthesis of raw and published data from eleven Hajj seasons between 2005 and 214. For seven Hajj seasons the data were obtained from studies involving pilgrims of UK, Saudi Arabia and Australia; and for the remaining four Hajj seasons data were abstracted from published studies involving pilgrims from multiple countries. The data from both sources were synthesised to estimate the relative risk (RR) of acquisition of ILI in vaccinated versus unvaccinated pilgrims.

Results

The pooled sample size of the included studies was 33,213 with most pilgrims being in the age band of 40–60 years (range: 0.5 to 95 years) and a male to female ratio of 1.6. The pilgrims originated, in order of frequency, from Iran, Australia, France, UK, Saudi Arabia, Indonesia, India, Algeria, Ivory Coast, Nigeria, Somalia, Turkey, Syria, Sierra Leone and USA. Except for one year (2008), data from individual years did not demonstrate a noticeable change in the rate of ILI against influenza vaccine coverage, however the combined data from all studies suggest that the prevalence of ILI decreased among Hajj pilgrims as the vaccine coverage increased over the last decade (RR 0.2, $P < 0.01$).

Conclusion

This analysis suggests that influenza vaccine might be beneficial for Hajj pilgrims. However, controlled trials aided by molecular diagnostic tools could confirm whether such an effect is real or ostensible.

Journal: Vaccine

Year of publication: 2015

Volume: 33(22)

Page numbers: 2562-2569

SHORTLINK: bit.ly/1U7bCNj

Title: Profile, outcome and predictors of mortality of abdomino-pelvic trauma patients in a tertiary intensive care unit in Saudi Arabia

Author(s): Haddad, S. H., Yousef, Z. M., Al-Azzam, S. S., AlDawood, A. S., AlZamel, H. A. et al.

Affiliation: Intensive Care Department, King Abdulaziz Medical City, Riyadh, Saudi Arabia; ²⁻⁴ King Saud Bin Abdulaziz University for Health Sciences, King Abdulaziz Medical City, Riyadh, Saudi Arabia; et al.

Abstract:

INTRODUCTION: The Saudi Arabia (KSA) is one of countries with the world's highest number of deaths per 100,000 populations from road traffic accidents (RTAs). Numerous trauma victims sustain abdomino-pelvic injuries, which are associated with considerable morbidity and mortality. The purpose of this study was to describe profile, outcomes and predictors of mortality of patients with abdomino-pelvic trauma admitted to the intensive care unit (ICU) in a tertiary care trauma centre in Riyadh, KSA.

METHODS: This was a retrospective analysis of prospectively collected ICU database. All consecutive patients older than 14 years with abdomino-pelvic trauma from March 1999 to June 2013 were included. The followings were extracted: demographics, injury severity, mechanism and type of injury, associated injuries, use of vasopressors and mechanical ventilation, and worst laboratory results in the first 24h. The primary outcome was hospital mortality. We compared profile and outcomes between survivors and non-survivors and reported predictors of mortality.

RESULTS: Of the 11,374 trauma patients who were admitted to the hospital during the study period, 2120 (18.6%) patients had abdomino-pelvic injuries, out of which 702 (33.1%) patients were admitted to the ICU. The mean age was 30.7 (SD 14.4) years and the majority was male (89.5%). RTA was the most common cause of abdomino-pelvic trauma (70.4%). Pelvis (46.2%), liver (25.8%), and spleen (23.1%) were the most frequently injured organs; and chest (55.6%), head (41.9%), and lower extremities (27.5%) were the most commonly associated injuries. Mechanical ventilation was required in 89.6% with a mean duration of 9.1 (SD 9.2) days and emergency surgery was performed in 45.0% of the patients with prolonged ICU and hospital length of stay (10.8 [SD 10.8], 56.9 [SD 96.7] days; respectively). Of the 702 patients with abdomino-pelvic trauma, 115 (16.4%) patients did not survive. Associated head trauma and retroperitoneal haematoma, higher level of lactic acid on admission and ISS, and advanced age were potential risk factors for hospital mortality.

CONCLUSIONS: Abdomino-pelvic injuries are common in trauma patients, affecting mainly young male victims, and are associated with significant morbidity and mortality, and resource utilisation.

Journal: Injury-International Journal of the Care of the Injured

Year of Publication: 2015

Publication issue: 46(1)

Page numbers: 94-99

SHORTLINK: bit.ly/1t8qstL

Title: Impact of empirical antimicrobial therapy on the outcome of critically ill patients with *Acinetobacter* bacteremia

Author(s): Al-Dorzi, H. M., Asiri, A. M., Shimemri, A. S., Tamin, H. M., Al Johani, S. M., et al.

Affiliation: ¹⁻⁴ Department of Intensive Care, King Abdulaziz Medical City, College of Medicine, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Department of Pathology and Laboratory Medicine, King Abdulaziz Medical City, Riyadh, Saudi Arabia; et al.

Abstract:

RATIONALE: Empirical antimicrobial therapy (EAT) for *Acinetobacter* infections may not be appropriate, as it tends to be multidrug-resistant. This study evaluated the relationship between appropriate EAT and the outcomes of Intensive Care Unit (ICU) patients with *Acinetobacter* bacteremia.

METHODS: This is a retrospective study of patients admitted to a medical-surgical ICU (2005-2010) and developed *Acinetobacter* bacteremia during the stay. Patients were categorized according to EAT appropriateness, defined as administration of at least one antimicrobial agent to which the *Acinetobacter* was susceptible before susceptibility results were known. The relation between EAT appropriateness and outcomes was evaluated.

RESULTS: Sixty patients developed *Acinetobacter* bacteremia in the 6-year period (age = 50 ± 19 years; 62% males; Acute Physiology and Chronic Health Evaluation II score = 28 ± 9 ; 98.3% with central lines; 67% in shock and 59% mechanically ventilated) on average on day 23 of ICU and day 38 of hospital stay. All isolates were resistant to at least three of the tested antimicrobials. Appropriate EAT was administered to 60% of patients, mostly as intravenous colistin. Appropriate EAT was associated with lower ICU mortality risk (odds ratio: 0.15; 95% confidence interval: 0.03-0.96) on multivariate analysis.

CONCLUSIONS: In this 6-year cohort, *Acinetobacter* bacteremia was related to multidrug-resistant strains. Appropriate EAT was associated with decreased ICU mortality risk.

Journal: Annals of Thoracic Medicine

Year of Publication: 2015

Publication issue: 10(4)

Page numbers: 256-262

SHORTLINK: bit.ly/1YciUCy

Title: Prevalence and predictors of out-of-range cuff pressure of endotracheal and tracheostomy tubes: a prospective cohort study in mechanically ventilated patients

Author(s): Alzahrani, A. R., Al Abbasi, S., Abahoussin, O. K., Al Shehri, T. O., Al-Dori, H. M. et al.

Affiliation: ¹⁻⁵ Intensive Care Department; King Abdulaziz Medical City, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Background: Maintaining the cuff pressure of endotracheal tubes (ETTs) within 20–30 cmH₂O is a standard practice. The aim of the study was to evaluate the effectiveness of standard practice in maintaining cuff pressure within the target range.

Methods: This was a prospective observational study conducted in a tertiary-care intensive care unit, in which respiratory therapists (RTs) measured the cuff pressure 6 hourly by a handheld manometer. In this study, a research RT checked cuff pressure 2–4 h after the clinical RT measurement. Percentages of patients with cuff pressure levels above and below the target range were calculated. We identified predictors of low-cuff pressure.

Results: We analyzed 2120 cuff-pressure measurements. The mean cuff pressure was 27 ± 2 cmH₂O by the clinical RT and 21 ± 5 cmH₂O by the research RT ($p < 0.0001$). The clinical RT documented that 98.0 % of cuff pressures were within the normal range. The research RT found the cuff pressures to be within the normal range in only 41.5 %, below the range in 53 % and above the range in 5.5 %. Low cuff pressure was found more common with lower ETT size (OR, 0.34 per 0.5 unit increase in ETT size; 95 % CI, 0.15–0.79) and with lower peak airway pressure (OR per one cm H₂O increment, 0.93; 95 % CI, 0.87–0.99) on multivariate analysis.

Conclusions: Cuff pressure is frequently not maintained within the target range with low-cuff pressure being very common approximately 3 h after routine measurements. Low cuff pressure was associated with lower ETT size and lower peak airway pressure. There is a need to redesign the process for maintaining cuff pressure within the target range.

Journal: BMC Anesthesiology

Year of Publication: 2015

Publication issue: 15

Page numbers:

SHORTLINK: bit.ly/1Od3A6r

Title: Ultrasound imaging accurately identifies the intercostobrachial nerve

Author(s): Thallaj, A. K., Al Harbi, M. K., Alzahrani, T. A., El-Tallawy, S. N. Alsaif, A. A. et al.

Affiliation:^{1,3-4} *Departments of Anesthesia, ² College of Medicine, King Saud University; Department of Anesthesia, King Abdulaziz Medical City, King Saud Bin Abdulaziz University for Health Science, Riyadh, Saudi Arabia; et al.*

Abstract:

Objectives: To test the hypothesis that identification and blockade of the intercostobrachial nerve (ICBN) can be achieved under ultrasound (US) guidance using a small volume of local anesthetic.

Methods: Twenty-eight adult male volunteers were examined at King Khalid University Hospital, Riyadh, Saudi Arabia from November 2012 to September 2013. Intercostobrachial nerve blockade was performed using one ml of 2% lidocaine under US guidance. A sensory map of the blocked area was developed relative to the medial aspect of the humeral head.

Results: The ICBN appears as a hyper-echoic structure. The nerve diameter was 2.3 ± 0.28 mm, and the depth was 9 ± 0.28 mm. The measurements of the sensory-blocked area relative to the medial aspect of the humeral head were as follows: 6.3 ± 1.6 cm anteriorly; 6.2 ± 2.9 cm posteriorly; 9.4 ± 2.9 cm proximally; and 9.2 ± 4.4 cm distally. Intercostobrachial nerve blockade using one ml of local anesthetic was successful in all cases.

Conclusion: The present study described the sonographic anatomical details of the ICBN and its sensory distribution to successfully perform selective US-guided ICBN blockade.

Journal: *Saudi Medical Journal*

Year of Publication: 2015

Publication issue: 36(10)

Page numbers: 1241-1244

SHORTLINK: bit.ly/1YciUCy

Title: Erythropoietin in traumatic brain injury: Study protocol for a randomised controlled trial

Author(s): Nichol, A., French, C., Little, L., Haddad, S., ..., Arabi, Y., et al.

Affiliation: Monash University, Melbourne, Australia; Department of Intensive Care Medicine, The Alfred, Melbourne, Australia; St Vincent's University Hospital, Elm Park, Dublin, Ireland; University College Dublin, Ireland; Department of Intensive Care, King Abdulaziz Medical City, Riyadh, Saudi Arabia; et al.

Abstract:

Background: Erythropoietin might have neurocytoprotective effects. In this trial, we studied its effect on neurological recovery, mortality, and venous thrombotic events in patients with traumatic brain injury. Methods: Erythropoietin in Traumatic Brain Injury (EPO-TBI) was a double-blind, placebo-controlled trial undertaken in 29 centres (all university-affiliated teaching hospitals) in seven countries (Australia, New Zealand, France, Germany, Finland, Ireland, and Saudi Arabia). Within 24 h of brain injury, 606 patients were randomly assigned by a concealed web-based computer-generated randomisation schedule to erythropoietin (40 000 units subcutaneously) or placebo (0.9% sodium chloride subcutaneously) once per week for a maximum of three doses. Randomisation was stratified by severity of traumatic brain injury (moderate vs severe) and participating site. With the exception of designated site pharmacists, the site dosing nurses at all sites, and the pharmacists at the central pharmacy in France, all study personnel, patients, and patients' relatives were masked to treatment assignment. The primary outcome, assessed at 6 months by modified intention-to-treat analysis, was improvement in the patients' neurological status, summarised as a reduction in the proportion of patients with an Extended Glasgow Outcome Scale (GOS-E) of 1–4 (death, vegetative state, and severe disability). Two equally spaced preplanned interim analyses were done (after 202 and 404 participants were enrolled).

Findings: Between May 3, 2010, and Nov 1, 2014, 606 patients were enrolled and randomly assigned to erythropoietin (n=308) or placebo (n=298). Ten of these patients (six in the erythropoietin group and four in the placebo group) were lost to follow up at 6 months; therefore, data for the primary outcome analysis was available for 596 patients (302 in the erythropoietin group and 294 in the placebo group). ...

Journal: The Lancet

Year of Publication: 2015

Publication issue: 386

Page numbers: 2499-2506

SHORTLINK: bit.ly/1UzuJgi

Title: Erythropoietin in traumatic brain injury(EPO-TBI): a randomised controlled trial

Author(s): Nichol, A., French, C., Little, L., Haddad, S., Presneill, J. R., et al.

Affiliation: ^{1,3,5} Australian and New Zealand Intensive Care Research Centre, Monash University, Melbourne, Australia; ² University of Melbourne, Australia; ⁵ King Abdulaziz Medical City, National Guard Health Affairs, Riyadh, Saudi Arabia; et al.

Abstract:

Background

Erythropoietin might have neurocytoprotective effects. In this trial, we studied its effect on neurological recovery, mortality, and venous thrombotic events in patients with traumatic brain injury.

Methods

Erythropoietin in Traumatic Brain Injury (EPO-TBI) was a double-blind, placebo-controlled trial undertaken in 29 centres (all university-affiliated teaching hospitals) in seven countries (Australia, New Zealand, France, Germany, Finland, Ireland, and Saudi Arabia). Within 24 h of brain injury, 606 patients were randomly assigned by a concealed web-based computer-generated randomisation schedule to erythropoietin (40 000 units subcutaneously) or placebo (0.9% sodium chloride subcutaneously) once per week for a maximum of three doses. Randomisation was stratified by severity of traumatic brain injury (moderate vs severe) and participating site. With the exception of designated site pharmacists, the site dosing nurses at all sites, and the pharmacists at the central pharmacy in France, all study personnel, patients, and patients' relatives were masked to treatment assignment.

Findings

Between May 3, 2010, and Nov 1, 2014, 606 patients were enrolled and randomly assigned to erythropoietin (n=308) or placebo (n=298). Ten of these patients (six in the erythropoietin group and four in the placebo group) were lost to follow up at 6 months; therefore, data for the primary outcome analysis was available for 596 patients (302 in the erythropoietin group and 294 in the placebo group). Compared with placebo, erythropoietin did not reduce the proportion of patients with a GOS-E level of 1–4 (134 [44%] of 302 patients in the erythropoietin group vs 132 [45%] of 294 in the placebo group; relative risk [RR] 0.99 [95% CI 0.83–1.18], p=0.90). In terms of safety, erythropoietin did not significantly affect 6-month mortality versus placebo (32 [11%] of 305 patients had died at 6 months in the erythropoietin group vs 46 [16%] of 297 [16%] in the placebo group; RR 0.68 [95% CI 0.44–1.03], p=0.07) or increase the occurrence of deep venous thrombosis of the lower limbs (48 [16%] of 305 vs 54 [18%] of 298; RR 0.87 [95% CI 0.61–1.24], p=0.44).

Interpretation

Following moderate or severe traumatic brain injury, erythropoietin did not reduce the number of patients with severe neurological dysfunction (GOS-E level 1–4) or increase the incidence of deep venous thrombosis of the lower limbs. The effect of erythropoietin on mortality remains uncertain.

Journal: The Lancet

Year of publication: 2015

Volume: 386(10012)

Page numbers: 2499-2506

SHORTLINK: bit.ly/1TVeGdj

Title: 3 Tesla MRI surface coil: Is it sensitive for prostatic imaging?

Author(s): Agha, M. & Eid, A. F.

Affiliation: Medical Research Institute, Alexandria University, Egypt; Almana General Hospital, Saudi Arabia; National Guard Hospital, Saudi Arabia.

Abstract:

Objective: This study aimed to check the sensitivity of phased array surface coil of 3T MRI, in pre-sampling diagnosis of prostate cancer, in an attempt to use it instead of endorectal coil. Patients

and methods: This was a prospective comparative study, included 20 male patients, presented with suspected prostate cancer due to unexplained high PSA. The study protocol was approved by the ethics committee in Al-Mana General Hospital.

Results: Prostate cancer was correctly diagnosed by T2w sequence within 9 patients, 10 by DW&T2w, 13 by T2w – DW-DCE and 14 by of T2w-DW-DCE-MRS sequences. **Conclusion:** 3T MRI imaging using phased array surface coil is a useful diagnostic tool for detecting prostate cancer, trustworthy when compared to endorectal approach.

Journal: Alexandria Journal of Medicine

Year of Publication: 2015

Publication issue: 51(2)

Page numbers: 111-119

SHORTLINK: bit.ly/1UorkAY

Title: Common Complications of Nonvascular Percutaneous Thoracic Interventions: Diagnosis and Management

Author(s): Khankan, A., Sirhan, S. & Aris, F.

Affiliation: Department of Medical Imaging, King Abdulaziz Medical City, Riyadh, Saudi Arabia; Jewish General Hospital, McGill University, Montreal, Canada; Department of Diagnostic Radiology, McGill University Health Centre, Montreal, Canada.

Abstract:

Percutaneous thoracic interventions are among the most common procedures in today's medical practice. From the simple placement of a pleural drain to the ablation of lung tumors, the advent of image guidance has revolutionized minimally invasive procedures and has allowed for the introduction of new techniques and widened the range of indications. It is therefore imperative to understand the complications associated with these interventions and their management. This article illustrates the common complications associated with these interventions and highlights the relative safety of these interventions.

Journal: Seminars in Interventional Radiology

Year of Publication: 2015

Publication issue: 32(2)

Page numbers: 174-181

SHORTLINK: bit.ly/1tgKxig

Title: Current worldwide nuclear cardiology practices and radiation exposure: results from the 65 country IAEA Nuclear Cardiology Protocols Cross-Sectional Study (INCAPS)

Author(s): Einstein, A. J., Pascual, T. N. B., Mercuri, M., Karthikeyan, G., Al-Mallah, M.H. et al.

Affiliation: Columbia University Medical Center and New York-Presbyterian Hospital, New York, USA; Columbia, University Medical Center and New York-Presbyterian Hospital, New York, USA; International Atomic Energy Agency, Vienna, Austria; All India Institute of Medical Sciences, New Delhi, India; Quanta Diagnostico &Terapia, Curitiba, Brazil; Division of Advanced Cardiac Imaging, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Aims: To characterize patient radiation doses from nuclear myocardial perfusion imaging (MPI) and the use of radiation-optimizing 'best practices' worldwide, and to evaluate the relationship between laboratory use of best practices and patient radiation dose.

Methods and results: We conducted an observational cross-sectional study of protocols used for all 7911 MPI studies performed in 308 nuclear cardiology laboratories in 65 countries for a single week in March–April 2013. Eight 'best practices' relating to radiation exposure were identified a priori by an expert committee, and a radiation-related quality index (QI) devised indicating the number of best practices used by a laboratory. Patient radiation effective dose (ED) ranged between 0.8 and 35.6 mSv (median 10.0 mSv). Average laboratory ED ranged from 2.2 to 24.4 mSv (median 10.4 mSv); only 91 (30%) laboratories achieved the median ED \leq 9 mSv recommended by guidelines. Laboratory QIs ranged from 2 to 8 (median 5). Both ED and QI differed significantly between laboratories, countries, and world regions. The lowest median ED (8.0 mSv), in Europe, coincided with high best-practice adherence (mean laboratory QI 6.2). The highest doses (median 12.1 mSv) and low QI (4.9) occurred in Latin America. In hierarchical regression modelling, patients undergoing MPI at laboratories following more 'best practices' had lower EDs.

Conclusion: Marked worldwide variation exists in radiation safety practices pertaining to MPI, with targeted EDs currently achieved in a minority of laboratories. The significant relationship between best-practice implementation and lower doses indicates numerous opportunities to reduce radiation exposure from MPI globally.

Journal: European Heart Journal

Year of Publication: 2015

Publication issue: 36(26)

Page numbers: 1689-1696

SHORTLINK: bit.ly/1RWZTMM

Title: An Increasing Population with Metabolic Syndrome and/or Diabetes Mellitus in the Middle East—Is There an Added Value of Coronary Calcium Scoring to Myocardial Perfusion Imaging?

Author(s): Al-Mallah, M. H. & Aljizeeri, A.

Affiliation: Ministry of National Guard Health Affairs, King Abdulaziz Cardiac Center, Riyadh, Saudi Arabia; King Abdulaziz Medical City, King Abdulaziz Cardiac Center, Riyadh, Saudi Arabia.

Abstract:

The population of the Middle East is a growing population characterized by increasing prevalence of metabolic syndrome, diabetes, and obesity. Both myocardial perfusion imaging (MPI) and coronary artery calcification (CAC) have a well-validated role in the diagnosis and prognosis of coronary artery disease (CAD). In the recent years, adding CAC score to myocardial perfusion imaging has been associated with incremental diagnostic and prognostic value. The aim of this paper is to review the diagnostic and prognostic value of adding CAC score to nuclear MPI in the Middle Eastern patients in the face of increasing prevalence of metabolic syndrome and CAD risk factors. Since limited local data are available from the Middle East, this review will focus on reports on similar cohorts from the western world.

Journal: European Heart Journal

Year of Publication: 2015

Publication issue: 36(26)

Page numbers: 1689-1696

SHORTLINK: bit.ly/1UeKw8q

Title: Prognostic value of extracardiac incidental findings on attenuation correction cardiac computed tomography

Author(s): Qureshi, W. T., Alirhayim, Z., Khalid, F. & Al-Mallah, M.H.

Affiliation: ^{1,3} Wake Forest University School of Medicine, Winston Salem, USA; ^{2,4} Henry Ford Hospital/ Wayne State University, Detroit, USA; King Abdulaziz Medical City, College of Medicine, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

BACKGROUND:

Attenuation corrected computed tomography (CTAC) is often performed to improve the specificity of single-photon emission tomography imaging. Extracardiac incidental findings are frequently observed. It is unclear whether these findings have any prognostic value.

METHODS:

Consecutive patients (n = 1139) at a tertiary care center were retrospectively evaluated for incidental findings on CTAC. Clinically significant incidental findings were defined as findings warranting physician follow-up. Information regarding subsequent resource utilization was obtained by chart review. Cox proportional hazard model adjusted for demographic and clinical variables was used to evaluate association of these incidental findings with all-cause and cancer-specific mortality.

RESULTS:

A total of 135 (12%) patients with incidental findings were identified, 83 of whom (68%) were newly diagnosed. Lung nodules were the most common finding, present in 92 (68%) patients. Over a median follow-up of 468 days, incidental findings were not significantly associated with increased risk of all-cause mortality (HR 1.34; 95% CI 0.77-2.33, P = 0.29) but was significantly associated with cancer-specific mortality (HR 3.21; 95% CI 1.26-8.14, P = 0.01). This association remained statistically significant when the analysis was limited to newly diagnosed incidental findings. Among patients with incidental findings, follow-up radiographic studies were conducted in 87%, and invasive procedures performed in 32%. Physician office-based follow-up of these findings occurred in 42% of patients and incidental finding-related hospitalization occurred in 14%.

CONCLUSIONS:

This study shows that incidental findings are common and were associated with all-cause and cancer-specific mortality but only the later remained statistically significant after multivariable adjustment.

Journal: Journal of Nuclear Cardiology

Year of Publication: 2015

Publication issue: -

Page numbers: -

SHORTLINK: bit.ly/1PhbUwP

Title: Increased cesarean section rate in Central Saudi Arabia: A change in practice or different maternal characteristics

Author(s): Al-Kadri, H. M., Al-Anazi, S. A. & Tamin, H. M.

Affiliation: ¹⁻² Department of Obstetrics and Gynecology, King Abdulaziz Medical City; College of Medicine, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia

Abstract:

Background: Cesarean section (CS) rate has shown an alarming increase. We aimed in this work to identify factors contributing to the increasing rate of CS in central Saudi Arabia.

Methods: A retrospective cohort study was conducted at King Abdulaziz Medical City. Two groups of women were included (G1 and G2). G1 had delivered by CS during the year 2002 (CS rate 12%), and G2 had delivered by CS during the year 2009 (CS rate 20%). We compared the included women's characteristics, neonates, CS indications, and complications. Data were analyzed using SPSS version 15 program. Odds ratios and confidence intervals were calculated to report precision of categorical data results. A *P*-value of #0.05 was considered significant.

Results: A total of 198 women were included in G1 and 200 in G2. Both groups had comparable maternal and fetal characteristics; however, absence of antenatal care has resulted in 70% increase in CS deliveries for G2, *P*=0.008, OR =0.30, CI 0.12–0.76. Previous vaginal surgeries have contributed to tenfold increase in CS deliveries for G2, *P*=0.006, OR =10.37, CI 1.32–81.78. G2 had eight times increased CS deliveries than G1 due to intrauterine growth restriction, *P*=0.02, OR =8.21, CI 1.02–66.25, and 80% increased risk of CS was based on maternal demand, *P*=0.02, OR =0.20, CI 0.02–1.71. Decision taken by less-experienced staff was associated with 2.5-fold increase in CS deliveries for G2, *P*=0.002, OR =2.62, CI 1.39–4.93. There was a significant increase in CS deliveries under regional analgesia and shorter duration of hospital stay for G2, *P*=0.0001 and *P*=0.001, respectively. G2 women had 2.75-fold increase in neonatal intensive care unit admission, *P*=0.03, OR =2.75, CI 1.06–7.15.

Conclusion: CS delivery rate significantly increased within the studied population. The increased rate of CS may be related to a change in physician's practice rather than a change in maternal characteristics, and it appears to be reducible.

Journal: International Journal of Women's Health

Year of Publication: 2015

Publication issue: 7

Page numbers: 685-692

SHORTLINK: [bit.ly /28jYAnb](http://bit.ly/28jYAnb)

Title: Idiopathic peripapillary subretinal neovascular membrane in a young woman with recurrence of the lesion during pregnancy after treatment with intravitreal bevacizumab

Author(s): Al-Gharbi, N., Al Abdulsalam, O. & Al Habash, A.

Affiliation: Division of Vitreoretinal, Dhahran Eye Specialist Hospital, Dhahran, Saudi Arabia; Department of Ophthalmology, King Abdulaziz Hospital, Al Ahsa, National Guard Health Affairs, Saudi Arabia; Department of Ophthalmology, University of Dammam, Dammam, Saudi Arabia.

Abstract:

We report a 27-year-old woman who was diagnosed with idiopathic peripapillary subretinal neovascular membrane (PSRNVM) in her left eye with best-corrected visual acuity (BCVA) of 20/160. She had been treated by three monthly doses of intravitreal bevacizumab (1.25 mg/0.05 ml) at 4-week intervals, which showed a favorable response. The treatment led to regression of the choroidal neovascular membrane (CNVM) with complete resorption of subretinal fluid and improvement of BCVA to 20/25. Subsequently, recurrence of the CNVM was observed during pregnancy (28 months after treatment). To the best of our knowledge, this is the first report of recurrence of idiopathic PSRNVM during pregnancy.

Journal: Middle East African Journal of Ophthalmology

Year of Publication: 2015

Publication issue: 22(2)

Page numbers: 245-248

SHORTLINK: bit.ly/1Y8FVG0

Title: Prevalence and characteristics of abnormal Papanicolaou smear in Central Saudi Arabia

Author(s): Al-Kadri, H. M., Kamal, M., Bamuhair, S. S., Omair, A. A. & Bamefleh, H. S.

Affiliation: Departments of Obstetrics and Gynecology, King Abdulaziz Medical City, College of Medicine, Histopathology; King Abdulaziz Medical City and College of Applied Health Sciences, the College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Objectives: To assess the prevalence and characteristics of abnormal pap smear in the central region of Saudi Arabia.

Methods: In this retrospective case control study conducted in the Departments of Obstetrics and Gynecology, and Histopathology at King Abdulaziz Medical City, Riyadh, Saudi Arabia, all pap smears screened for Saudi women between 2008 and 2011 were reviewed. Approximately 5000 pap smears are screened annually at King Abdulaziz Medical City utilizing the Bethesda III System (2001). All abnormal smears patients' data were collected and compared to the data of randomly selected 200 normal smears' patients.

Results: Abnormal pap smear prevalence was found to be 4.3% (841/19,650 Saudi patients were found with atypical epithelial cells abnormalities). Its prevalence in the years 2008 was 5.7%, 2009 was 4.9%, 2010 was 4.2%, and 2011 was 2.5%. Abnormal smear patients have lower parity ($p=0.001$), and were less likely to use intra-uterine devices ($p=0.03$) compared with normal smear patients. Presence of abnormal cervical appearance was associated with increased epithelial cell abnormalities ($p=0.045$). The only positive history that has characterized patients with epithelial cell abnormalities was their previous history of abnormal pap smear ($p=0.001$). Squamous cell abnormalities were identified in 91% of the patients (767/841), and glandular cell abnormalities were identified in 9% of the patients (74/841).

Conclusion: Prevalence of abnormal pap smears in central Saudi Arabia is relatively low, while advanced glandular abnormalities prevalence was observed to be high.

Journal: Saudi Medical Journal

Year of Publication: 2015

Publication issue: 36(1)

Page numbers: 117-122

SHORTLINK: bit.ly/1XDTpey

Title: Pregnancy after breast cancer: Are young patients willing to participate in clinical studies?

Author(s): Pagani, O., Ruggeri, M., Manunta, S., Saunders, C., ..., Abulkhair, O. M., et al.

Affiliation: Oncology Institute of Southern Switzerland, Switzerland; ²⁻³ International Breast Cancer Study Group, Switzerland; Oncology Institute of Southern Switzerland, Switzerland; Department of Oncology, King Abdul Aziz Medical City for National Guard, Riyadh, Saudi Arabia; et al.

Abstract:

Young patients with breast cancer (BC) are often concerned about treatment-induced infertility and express maternity desire. Conception after BC does not seem to affect outcome, but information in estrogen-receptor positive (ER+) disease is not definitive. From September 2012-March 2013, 212 evaluable patients with ER+ early BC, <37 years at diagnosis, from 5 regions (Europe/US/Canada/Middle-East/Australia) answered a survey about fertility concerns, maternity desire and interest in a study of endocrine therapy (ET) interruption to allow pregnancy. Overall, 37% of respondents were interested in the study; younger patients (≤ 30 years) reported higher interest (57%). Motivation in younger patients treated >30 months was higher (83%) than in older women (14%), interest was independent of age in patients treated for ≤ 30 months. A prospective study in this patient population seems relevant and feasible. The International-Breast-Cancer-Study-Group (IBCSG), within the Breast-International-Group (BIG) - North-American-Breast-Cancer-Groups (NABCG) collaboration, is launching a study (POSITIVE) addressing ET interruption to allow pregnancy.

Journal: Breast

Year of Publication: 2015

Publication issue: 24(3)

Page numbers: 201-207

SHORTLINK: bit.ly/1UeKEEY

Title: Management of immune-mediated cytopenias in pregnancy

Author(s): Piatek, C. I., El-Hemaidi, I., Feinstein, D. I., Liebman, H. A. & Akhtari, M.

Affiliation: ^{1,3-5} University of Southern California , USA; Princess Noorah Oncology Center, King Abdulaziz Medical City-Western Region, National Guard Health Affairs, Jeddah, Saudi Arabia.

Abstract:

Immune-mediated cytopenias are a well-described complication of pregnancy. Appropriate recognition and treatment are important in order to limit maternal and fetal morbidity and mortality. First line treatment options are fairly well-established for these entities. Refractory disease may be difficult to manage because treatment choices are limited by known or unestablished risk to the fetus. While the use of new agents, such as romiplostim and rituximab, has been reported, their safety in pregnancy is not known. This article summarizes immune cytopenias seen in pregnant patients, and it also discusses management of these cytopenias, and provides practical strategies for the treatment of these challenging conditions.

Journal: Autoimmunity Reviews

Year of Publication: 2015

Publication issue: 14(9)

Page numbers: 806-811

SHORTLINK: bit.ly/1UeL7a3

Title: Evaluating Palliative Care Needs in Middle Eastern Countries

Author(s): Silbermann, M., Fink, R. M., Mancuso, M. P., Hajjar, R., ... Fallatah, F., et al.

Affiliation: Technion-Israel Institute of Technology, Haifa, Israel; University of Colorado Hospital, Aurora, Colorado; University of Colorado, School of Medicine, Aurora, Colorado; Billings Clinic, Billings, Montana; King Abdul Aziz Medical City, Jeddah, Saudi Arabia; et al.

Abstract:

Background: Cancer incidence in Middle Eastern countries, most categorized as low- and middle-income, is predicted to double in the next 10 years, greater than in any other part of the world. While progress has been made in cancer diagnosis/treatment, much remains to be done to improve palliative care for the majority of patients with cancer who present with advanced disease.

Objective: To determine knowledge, beliefs, barriers, and resources regarding palliative care services in Middle Eastern countries and use findings to inform future educational and training activities.

Design: Descriptive survey. **Setting/Subjects:** Fifteen Middle Eastern countries; convenience sample of 776 nurses (44.3%), physicians (38.3%) and psychosocial, academic, and other health care professionals (17.4%) employed in varied settings.

Measurements: Palliative care needs assessment.

Results: Improved pain management services are key facilitators. Top barriers include lack of designated palliative care beds/services, community awareness, staff training, access to hospice services, and personnel/time. The nonexistence of functioning home-based and hospice services leaves families/providers unable to honor patient wishes. Respondents were least satisfied with discussions around advance directives and wish to learn more about palliative care focusing on communication techniques. Populations requiring special consideration comprise: patients with ethnic diversity, language barriers, and low literacy; pediatric and young adults; and the elderly.

Conclusions: The majority of Middle Eastern patients with cancer are treated in outlying regions; the community is pivotal and must be incorporated into future plans for developing palliative care services. Promoting palliative care education and certification for physicians and nurses is crucial; home-based and hospice services must be sustained.

Journal: Journal of Palliative Medicine

Year of Publication: 2015

Publication issue: 18(1)

Page numbers: 18-25

SHORTLINK: bit.ly/1Xa4kM9

Title: Low frequency of ETV6-RUNX1 (t 12; 21) in Saudi Arabian pediatric acute lymphoblastic leukemia patients: Association with clinical parameters and early remission

Author(s): Aljamaan, K., Aljumah, T. K., Aloraibi, S., Absar, M. & Iqbal, Z.

Affiliation: ^{1-3,5} King Saud Bin Abdulaziz University for Health Sciences, King Abdulaziz Medical City, National Guard Health Affairs, Riyadh, Saudi Arabia; University of the Punjab, Lahore, Pakistan.

Abstract:

BACKGROUND:

Pediatric acute lymphoblastic leukemia (pALL) patients at King Abdulaziz Medical City represent a pure Saudi Arabian population. ETV6-RUNX1 positive pALL patients have good prognosis as compared to ETV6-RUNX1 negative counterparts. Therefore, frequencies of these two patient groups have a huge consideration in treatment strategies of pALL in a given population. Different geographical locations have been reported to have different frequencies of ETV6-RUNX1 ranging from 10% in Southeast Asia to 30% in Australia.

AIM:

Therefore, the objective of this study was to establish the ETV6-RUNX1 status of Saudi Arabian pALL patients and its association with clinical parameters and early remission.

MATERIALS AND METHODS:

Clinical parameters and ETV6-RUNX1 status (using FISH technique) of pALL patients attending the Pediatric Oncology Clinic, King Abdulaziz Medical City, Riyadh from 2006 to 2011 were studied. Comparisons between ETV6-RUNX1 positive and negative groups were accomplished using chi-square test or Fisher's exact test. All statistical analyses were performed using SAS version 9.2 (SAS Institute, Inc., Cary, NC).

RESULTS:

Out of 54 patients, 33 were male and 21 were females (ratio 1.57:1). B- and T-cell lineages were found in 47 (87%) and 7 (13%) patients respectively. Only 5 (9.3%) patients were ETV6-RUNX1 positive while 49(80.7%) were ETV6-RUNX1 negative. All ETV6-RUNX1 patients (100%) were of B-cell lineage and 80% (4/5) were in the 3-7 year age group. None of the ETV6-RUNX1 patients had $\geq 5\%$ blasts (no remission) at day 14 as compared with 9% in the ETV6-RUNX1 negative group (Figure 1).

CONCLUSIONS:

Frequency of ETV6-RUNX1 positive patients (less than 10%) in our pALL patients is much lower than reported for most European countries, North America, Australia and Japan while it is in accordance with ETV6-RUNX1 frequencies from Egypt (11.6%), Pakistan (10%), Spain (2%) and India (5-7%). ..

Journal: Asian Pacific Journal of Cancer Prevention

Year of Publication: 2015

Publication issue: 16(17)

Page numbers: 7523-7527

SHORTLINK: bit.ly/1WEjJEI

Title: Distress, concerns and unmet needs in survivors of head and neck cancer: a cross-sectional survey

Author(s): Wells, M., Cunningham, M., Lang, H., Swartzman, S., Philip, J., Taylor, L., et al.

Affiliation: University of Stirling, Stirling, UK; University of Dundee, Dundee, UK; School of Psychology, University of Dundee, Dundee, UK; Head and Neck Cancer Service, Queen Margaret Hospital, Dunfermline, UK; Ninewells Hospital, UK; Medicine & Surgery, King Abdulaziz Medical City, Jeddah, Saudi Arabia; et al.

Abstract:

The aim of this study was to identify the distress, unmet needs and concerns of head and neck cancer (HNC) survivors in the first 5 years after treatment. Two hundred and eighty HNC survivors from three Scottish health boards responded to a cross-sectional postal survey in 2011. Questionnaires included the Distress Thermometer, Patient Concerns Inventory (PCI) and an adapted version of the PCI to measure unmet needs. One-third of the survivors had moderate or severe levels of distress, and 74% had at least one unmet need. The most common concerns and unmet needs included oral and eating problems, fear of recurrence and fatigue. Multivariate analysis revealed that being younger, out of work (not retired), ever having had a feeding tube fitted, having a greater number of comorbidities and living alone were associated with higher levels of distress, concerns and unmet needs. The diversity of concerns and unmet needs identified in this study highlights the importance of holistic needs assessment as part of follow-up care for HNC survivors with tailoring of support for particular concerns. Specific information resources and self-management strategies are required to help HNC survivors with the practical and functional consequences of HNC treatment.

Journal: European Journal of Cancer Care

Year of Publication: 2015

Publication issue: 24(5)

Page numbers: 748-760

SHORTLINK: bit.ly/25LDI9F

Title: CD44 as a potential diagnostic tumor marker

Author(s): Basakran, N. S.

Affiliation: Department of Molecular Biology, King Khalid National Guard Hospital, Jeddah, Saudi Arabia.

Abstract:

CD44 is a cellular protein that has been intensively studied in relation to carcinogenesis over the last decade. It is altered during inflammatory responses and cellular malfunctioning during tumor progression. Tumors of epithelial origin express CD44 in multiple isoforms called variants; some isoforms are related to specific cancer cells. An increase of CD44 specific isoforms is detected in certain leukemic proliferations. Most published data indicates a partial involvement of CD44 in cancer cells, either in invasiveness or self-renewability. However, there is still uncertainty regarding the exact mechanism by which CD44 participates in growth of cancer or the inflammatory response. This review focuses on CD44 prevalence in cancer cell. It considers tumorigenic behavior of cells that highly express CD44 as an early marker for neoplastic stem cell proliferation. We will discuss multiple examples of tumor in this paper, with an emphasis of 2 solid tumors; namely, breast and colon cancer.

Journal: Saudi Medical Journal

Year of Publication: 2015

Publication issue: 36(3)

Page numbers: 273-279

SHORTLINK: bit.ly/1UEp4bB

Title: Bleomycin pulmonary toxicity in adult Saudi patients with Hodgkin's lymphoma

Author(s): Al-Jizani, W. A., Al-Mansour, M. M., Al-Fayea, T. M., Shafi, R. U., Kazkaz, G. A., et al.

Affiliation: ¹⁻⁴ Princess Noorah Oncology Center, King Abdulaziz Medical City, Jeddah , Saudi Arabia; Oncology Center of Excellence, International Medical Center, Jeddah; Saudi Arabia; et al.

Abstract:

BACKGROUND:

Bleomycin pulmonary toxicity (BPT) has been described in Hodgkin's lymphoma (HL) patients treated with bleomycin-containing chemotherapy regimens.

METHODOLOGY:

We reviewed the records of 164 consecutive HL patients.

RESULTS:

BPT was observed in 24 of 164 patients (15%). Older age and history of concomitant lung disease were significantly associated with approximately threefold (odds ratio: 3.38; 95% CI: 1.25-9.13; $p = 0.02$) and sevenfold (odds ratio: 7.19; 95% CI: 2.64-19.54; $p < 0.0001$) increase in BPT risk, respectively. The actuarial 5-year progression-free and overall survival for BPT and non-BPT groups, were not significantly different.

CONCLUSION:

In Saudi Arabian HL patients, the risk of BPT and its effect on survival outcome were comparable to that reported from developed countries.

Journal: Future Oncology

Year of Publication: 2015

Publication issue: 11(15)

Page numbers: 2149-2157

SHORTLINK: bit.ly/22OXDz8

Title: The predictive and prognostic role of phosphatase phosphoinositol-3 (PI3) kinase (PIK3CA) mutation in HER2-positive breast cancer receiving HER2-targeted therapy: a meta-analysis

Author(s): Ibrahim, E. M., Kazkaz, G. A., Al-Mansour, M. M. & Al-Foheidi, M. E.

Affiliation: ¹⁻² Oncology Center of Excellence, International Medical Center, Jeddah, Saudi Arabia; ³⁻⁴ Princess Noorah Oncology Center, King Abdulaziz Medical City, Jeddah, Saudi Arabia.

Abstract:

The association between PIK3CA mutation and resistance to anti-HER2 therapy (AHT) is not precisely defined. This meta-analysis intended to explore the clinical utility of PIK3CA mutation in HER2-positive breast cancer treated with AHT. Literature search identified 19 eligible studies. There were 1720 patients with advanced, 828 with early and 1290 patients treated in the neoadjuvant setting. In metastatic breast cancer, AHT showed no differential objective response benefit between the wild type (WT) and the mutated type (MT) PIK3CA subgroups (odds ratio [OR] = 1.09; 95 % CI 0.60–2.00; P = 0.78). AHT favorable affected progression-free survival (PFS) irrespective of PIK3CA mutation. There was no PFS difference between WT and MT regardless of the offered therapy. In early breast cancer, trastuzumab combined with the same chemotherapy conferred consistent relapse-free survival benefit in WT and MT subgroups (WT: HR = 0.59; 95 % CI 0.44–0.80; P<0.001 vs. MT: HR = 0.42; 95 % CI 0.24–0.74; P<0.001). In the neoadjuvant setting, AHT based therapy produced a 72 % higher pathologic complete response (pCR) rate in WT as compared with that in MT PIK3CA tumors (OR = 1.72; 95 % CI 1.29–2.13; P<0.001). In that setting, there was no disease-free or overall survival difference based on PIK3CA mutational status. In this meta-analysis, AHT did not achieve differential benefit according to PIK3CA mutation in HER2-positive metastatic or early breast cancer; however, in the neoadjuvant setting, patients harboring WT PIK3CA tumors attained a higher pCR rate.

Journal: Breast Cancer Research and Treatment

Year of Publication: 2015

Publication issue: 152(3)

Page numbers: 463-476

SHORTLINK: bit.ly/25LDS0B

Title: Advanced case of glioblastoma multiforme and pregnancy: An ethical dilemma

Author(s): Al-Rasheedy, I. M. & Al-Hameed, F. M.

Affiliation: Department of Medical Oncology, Princess Norah Oncology Center, Jeddah, Saudi Arabia; College of Medicine, King Saud bin Abdulaziz University for Health Sciences, King Abdulaziz Medical City, National Guard Health Affairs, Jeddah, Saudi Arabia.

Abstract:

Glioblastoma multiforme (GBM) is the most common and malignant form of the glial tumors. Advanced and treated GBM is rarely associated with pregnancy for many reasons. Glioblastoma multiforme presenting during pregnancy carries unique challenges to the patient, baby, family, and health care providers. We describe an unusual case of advanced GBM that was treated with maximum doses of chemotherapy and radiations, and she became pregnant and presented at eighteenth weeks of gestation. Her medical management was associated with a significant ethical dilemma. We managed to deliver the baby safely through cesarean section at week 28 despite the critical condition of the mother. Unfortunately, the mother died 2 weeks post-delivery. We concluded that although recurrent and treated GBM is rarely associated with pregnancy and carries dismal prognosis, but if it occurs, it can still be carried, and a multidisciplinary team work is the key for successful outcome.

Journal: Neurosciences

Year of Publication: 2015

Publication issue: 20(4)

Page numbers: 388-391

SHORTLINK: bit.ly/1TYuMrU

Title: A novel genomic signature reclassifies an oral cancer subtype

Author(s): Samman, M., Wood, H. M., Conway, C., Stead, L. ... Al Ajlan, A., Samkari, A., et al.

Affiliation: ¹⁻⁴ Leeds Institute of Cancer and Pathology, University of Leeds, Leeds, UK; Pathology and Clinical Laboratory Department, King Fahad Medical City, Riyadh, Saudi Arabia; National Guard Health Affairs, Riyadh, Saudi Arabia; et al.

Abstract:

Verrucous carcinoma of the oral cavity (OVC) is considered a subtype of classical oral squamous cell carcinoma (OSCC). Diagnosis is problematic, and additional biomarkers are needed to better stratify patients. To investigate their molecular signature, we performed low-coverage copy number (CN) sequencing on 57 OVC and exome and RNA sequencing on a subset of these and compared the data to the same OSCC parameters. CN results showed that OVC lacked any of the classical OSCC patterns such as gain of 3q and loss of 3p and demonstrated considerably fewer genomic rearrangements compared to the OSCC cohort. OVC and OSCC samples could be clearly differentiated. Exome sequencing showed that OVC samples lacked mutations in genes commonly associated with OSCC (TP53, NOTCH1, NOTCH2, CDKN2A and FAT1). RNA sequencing identified genes that were differentially expressed between the groups. In silico functional analysis showed that the mutated and differentially expressed genes in OVC samples were involved in cell adhesion and keratinocyte proliferation, while those in the OSCC cohort were enriched for cell death and apoptosis pathways. This is the largest and most detailed genomic and transcriptomic analysis yet performed on this tumour type, which, as an example of non-metastatic cancer, may shed light on the nature of metastases. These three independent investigations consistently show substantial differences between the cohorts. Taken together, they lead to the conclusion that OVC is not a subtype of OSCC, but should be classified as a distinct entity.

Journal: International Journal of Cancer

Year of Publication: 2015

Publication issue: 137(10)

Page numbers: 2364-2373

SHORTLINK: bit.ly/1VM4hoS

Title: Echocardiographic Detection of Cardiac Dysfunction in Childhood Cancer Survivors: How Long Is Screening Required?

Author(s): Ramjaun, A., AlDuhaiby, E., Ahmed, S., Wang, L., Nathan, P. C., et al.

Affiliation: ^{1,3} Princess Margaret Cancer Centre, Toronto, Canada; Princess Noorah Oncology Center, King Abdulaziz Medical City, Saudi Arabia; Toronto Western Hospital, Toronto, Canada; The Hospital for Sick Children and University of Toronto, Canada; et al.

Abstract:

BACKGROUND:

Childhood cancer survivors treated with anthracycline chemotherapy are at an increased risk of long-term cardiac toxicity, and guidelines recommend that exposed survivors undergo echocardiography every 1-5 years. However, it is unclear whether survivors should undergo echocardiographic screening indefinitely, or if a period of echocardiographic stability indicates that screening is no longer necessary. The objective of this study was to evaluate the outcomes of echocardiographic screening to aid in the refinement of existing guidelines.

METHODS:

We retrospectively analyzed the results of echocardiographic screening in a cohort of adult survivors of childhood cancer treated with anthracyclines and/or cardiac radiation therapy. Interval regression analysis was performed to identify predictors of single-episode or sustained abnormal echocardiograms.

RESULTS:

The cohort constituted 333 survivors, with median follow-up time of 15.8 years post-treatment (range: 5.0-47.9), and median age at treatment of 8 years (range: 1.5-18). Forty-nine survivors had an abnormal echocardiogram (14.7%), and 29 (8.7%) had reproducible abnormal findings. An ongoing continual increase in the incidence of sustained echocardiographic abnormality was seen among patients treated with >250 mg/m² doxorubicin at age <5 years, reaching 43% by 20 years of therapy. In contrast, no sustained abnormal echocardiographic findings arose after 10 years of therapy in survivors treated with <250 mg/m² at age ≥5 years.

CONCLUSIONS:

Single-episode echocardiographic abnormalities are often not reproduced in subsequent evaluations. The duration of echocardiographic screening for childhood cancer survivors should be reassessed for patients who received lower doses of anthracycline after age 5.

Journal: Pediatric Blood & Cancer

Year of Publication: 2015

Publication issue: 62(12)

Page numbers: 2197-2203

SHORTLINK: bit.ly/25LXr5q

Title: Increasing trends in kidney cancer over the last 2 decades in Saudi Arabia

Author(s): Alkhateeb, S. S., Alkhateeb, J. M. & Alrashidi, E. A.

Affiliation: Department of Surgery, King Abdulaziz Medical City, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Department of Surgery, King Abdulaziz Medical City, National Guards Hospital, Riyadh, Saudi Arabia.

Abstract:

Objectives: To examine the trends of kidney cancer over the last 2 decades in a subset of a Saudi Arabian population.

Methods: We conducted a retrospective study in a tertiary care center including all adult patients with primary kidney cancer who presented and were managed between 1990 and 2010. The time period was split into 4 quartiles, and variables tested and compared using chi-square, T-test, and Kaplan-Meier curves for survival.

Results: The total was 215 patients with a mean age of 57.8 years. There was an increase in the number of kidney cancer cases over the last 2 decades. There was no significant difference in the mode of presentation or stage distribution between quartiles. A significant change was observed in the management towards minimally invasive and nephron-sparing surgeries ($p < 0.001$). There was no change in recurrence-free and disease-specific survival over the last 20 years.

Conclusions: There have been an increasing number of kidney cancer patients over the last 2 decades with no observed migration towards more incidental and low stage tumors as compared with developed countries.

Journal: Saudi Medical Journal

Year of Publication: 2015

Publication issue: 36(6)

Page numbers: 697-702

SHORTLINK: bit.ly/1YciUCy

Title: Does the early intensification of intrathecal therapy improve outcomes in pediatric acute lymphoblastic leukemia patients with CNS2/TLP+ status at diagnosis?

Author(s): Jastaniah, W., Elimam, N., Abdalla, K., Khattab, T. M., Felimban, S., et al.

Affiliation: Princess Noorah Oncology Center, King Saud Bin Abdulaziz University and King Abdulaziz Medical City, Jeddah, Saudi Arabia; Department of Pediatrics, Faculty of Medicine, Umm AlQura University, Makkah, Saudi Arabia; et al.

Abstract:

OBJECTIVES:

We aimed to determine whether the addition of two extra intrathecal methotrexate (ITM) doses during induction in acute lymphoblastic leukemia (ALL) patients eliminate the prognostic significance of CNS2/TLP+ status.

METHODS:

We retrospectively analyzed 224 patients according to the central nervous system (CNS) involvement at diagnosis: CNS1, CNS2, or CNS3. Patients with CNS2/TLP+ received two additional ITM doses during induction. Patients were treated according to the Children's Cancer Group (CCG)-1991/1961 protocols between January 2001 and December 2007.

RESULTS:

The 5-year relapse-free survival (RFS) rates for the ALL patients in the CNS1, CNS2, and CNS3 groups were 80.4 ± 3.0 , 100, and $73.5 \pm 11.3\%$, respectively; a non-significant difference was observed between the groups ($P = 0.063$). However, the patients with CNS2 had significantly better survival compared with the CNS3 patients ($P = 0.03$). The 5-year cumulative incidence of relapse (CIR) rates for the three groups were 17 (95% confidence interval (CI): 11.9-22.9), 0, and 18.8% (95% CI: 4.3-41.1), respectively; ($P = 0.214$) and those of isolated or combined CNS relapse were 9.6 (95% CI: 5.8-14.5), 0 and 6.3% (95% CI: 0.3-25.8), respectively ($P = 0.424$).

CONCLUSIONS:

This study shows that the intensification of ITM therapy during induction improves outcomes in patients with CNS2/TLP+ status and eliminates its prognostic significance. This suggests that early intensification using CNS-directed therapy is beneficial in controlling minimal CNS disease.

Journal: Hematology

Year of Publication: 2015

Publication issue: 20(10)

Page numbers: 561-566

SHORTLINK: bit.ly/1rcPneD

Title: Gestational trophoblastic neoplasia: treatment outcomes from a single institutional experience

Author(s): Al-Husaini, H., Soudy, H., Darwish, A., Eltiqani, A. Edesa, W., et al.

Affiliation: King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia; Dr. Soliman Fakeeh Hospital, Jeddah, Saudi Arabia; National Guard Hospital, Riyadh, Saudi Arabia; Cairo University, Cairo, Egypt; Ain Shams University, Cairo, Egypt; et al.

Abstract:

PURPOSE:

To report the outcomes of gestational trophoblastic neoplasia (GTN) at a single institution and to determine the factors affecting response to chemotherapy and survival.

METHODS/PATIENTS:

From 1979-2010, we retrospectively reviewed the data of 221 patients treated at our center. GTN Patients were assigned to low-risk (score ≤ 6) or high-risk (score ≥ 7) based on the WHO risk factor scoring system. Overall survival (OS) probabilities were estimated using Kaplan-Meier method. Logistic regression was applied to study the impact of different factors on the response to initial therapy.

RESULTS:

Patients' OS rate was 97 %. Median age at diagnosis was 37 year. 131 (59 %) patients had low-risk and 88 (40 %) cases had high-risk GTN. Complete remission rates to initial chemotherapy in low-risk group were 53 % and 87 % for single-agent methotrexate or dactinomycin, respectively. In high-risk group, 94 % achieved complete remission to initial chemotherapy with etoposide, methotrexate, dactinomycin, cyclophosphamide, and vincristine (EMA-CO). Etoposide, cisplatin, and dactinomycin as primary therapy in high-risk patients was successful in 70 %, while bleomycin, etoposide, and cisplatin (BEP) was successful in 53 % of cases. Salvage chemotherapy, surgical intervention or radiation therapy resulted in overall complete remission of 90 % in low-risk and 73 % in high-risk groups. Factors associated with resistance to initial chemotherapy were advanced-stage III/IV ($p = 0.005$), metastatic site other than lung or vagina ($p = 0.005$) and high-risk prognostic score ($p = 0.05$). OS was significantly influenced by the type of antecedent pregnancy (molar 98 % vs. others 93 %; $p = 0.04$), FIGO stage (I, II 100 % vs. III, IV 94 %; $p = 0.02$), score (low-risk 100 % vs. high-risk 92 %; $p = 0.01$), and site of metastasis (lung/vagina 98 % vs. others 85 %; $p = 0.002$).

CONCLUSIONS:

GTNs have excellent prognosis if properly treated at experienced centers. Single-agent dactinomycin seems more effective for low-risk GTN. EMA-CO remains the preferred primary treatment regimen for high-risk group. The excellent outcome reflects the success of salvage therapy.

Journal: Clinical & Translational Oncology

Year of Publication: 2015

Publication issue: 17(5)

Page numbers: 409-415

SHORTLINK: bit.ly/1WEBLGL

Title: Giant prolactinomas: clinical manifestations and outcomes of 16 Arab cases

Author(s): Almalki, M. H., Buhary, B., Alzahrani, S., Alsherbeni, S. & Alhowsawi, F., Alsherbeni, S., et al.

Affiliation: Obesity, Endocrine and Metabolism Center, King Fahad Medical City, Riyadh, Saudi Arabia; ^{2-3,}

⁵ Obesity, Endocrine and Metabolism Center, King Fahad Medical City; College of Medicine, King Saud bin Abdulaziz University for Health Sciences; et al.

Abstract:

BACKGROUND:

The management of giant prolactinomas remains a major challenge, despite dopamine agonists being the first line of treatment, owing to its efficacy to normalize prolactin levels and reduce tumor volume. The aim of this study is to characterize the therapeutic aspects, manifestations and outcomes of 16 cases of giant prolactinomas admitted at a single tertiary center in Riyadh, Saudi Arabia.

METHODS:

Retrospective data collection involving 16 Saudi patients diagnosed with giant prolactinoma at the Pituitary Clinic in King Fahad Medical City, Riyadh, Saudi Arabia between January 2006 and July 2012.

RESULTS:

A total of 16 patients (ten males; six females) with age of diagnosis between 21 and 55 years (mean 34.9 years) were included in the analysis. The most common presenting features include headache, visual defects and sexual dysfunction. Baseline mean serum prolactin level were extremely high for both sexes which eventually decreased by as much as 97% after cabergoline treatment. Serum prolactin concentrations completely normalized in six patients and significantly decreased in five patients 3-5 times that of normal range. Tumor volume also decreased by an average of 86% for males and 87% for females. Two patients had no tumor size change with cabergoline and required surgery.

CONCLUSION:

Findings indicate that cabergoline provides dramatic clinical improvements with excellent safety profile. Cabergoline should therefore be considered as the primary therapy for giant prolactinomas.

Journal: Pituitary

Year of Publication: 2015

Publication issue: 18(3)

Page numbers: 405-409

SHORTLINK: bit.ly/25LDtLO

Title: Identifying Causes of Variability in Outcomes in Children With Acute Lymphoblastic Leukemia Treated in a Resource-Rich Developing Country

Author(s): Jastaniah, W., Elimam, N., Abdalla, K., Iqbal, B. A. C., Khattab, T. M., et al.

Affiliation: ¹⁻⁵ Princess Noorah Oncology Center, King Saud Bin Abdulaziz University and King Abdulaziz Medical City, Jeddah, Saudi Arabia; et al.

Abstract:

BACKGROUND:

The outcome of children with acute lymphoblastic leukemia (ALL) in developing countries is less favorable than in developed countries, primarily due to resource constraints. However, it is unknown whether the therapeutic results differ. Thus, we hypothesized that outcomes in resource-rich developing countries would be similar to those in industrialized regions.

PROCEDURE:

We performed a retrospective analysis of 224 consecutive children with ALL, who were treated according to the Children's Cancer Group (CCG) protocols between January 2001 and December 2007. High-risk (HR) and standard-risk (SR) patients were treated with modified CCG-1961 and CCG-1991 protocols, respectively. Modifications included substitution of dexamethasone for prednisone in HR patients and addition of two intrathecal methotrexate treatments for CNS2 patients during induction. All patients received double delayed intensification with two interim maintenance phases.

RESULTS:

Five-year overall survival (OS), event-free survival (EFS) and disease-free survival (DFS) were $84.7 \pm 2.4\%$, $77.0 \pm 2.9\%$, and $81.4 \pm 2.7\%$, respectively. Remission was achieved in 98.1% of the patients. Induction failure and relapse rates were 1.9% and 15.1%, respectively. Death as the first event occurred in 6.4% of cases, of which 2.7% and 3.7% involved deaths in induction and remission, respectively. Interestingly, a significant reduction in induction deaths was observed over time.

CONCLUSIONS:

Despite the encouraging results observed in the present study, our patients displayed significantly lower survival outcomes compared to subjects treated in major clinical trials conducted by leading leukemia cooperative groups. Furthermore, this work underscores the need for targeted interventions to reduce death as the first event in developing regions.

Journal: Pediatric Blood & Cancer

Year of Publication: 2015

Publication issue: 62(6)

Page numbers: 945-950

SHORTLINK: bit.ly/1UEpzlK

Title: Prophylaxis and treatment of venous thromboembolism in patients with cancer: the Saudi clinical practice guideline

Author(s): Al-Hameed, F., Al-Dorzi, H. M., AlMomen, A., Alqahtani, F., AlZahrani, H., et al.

Affiliation: Intensive Care Department, King Abdulaziz Medical City, Ministry of National Guard Health Affairs, Jeddah, Saudi Arabia; Intensive Care Department, King Abdulaziz Medical City, NGH, Riyadh, Saudi Arabia; ³⁻⁴ Department of Hematology, King Saud University, Riyadh, Saudi Arabia; King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia; et al.

Abstract:

BACKGROUND AND OBJECTIVES:

Venous thromboembolism (VTE) is commonly encountered in the daily clinical practice. Cancer is an important VTE risk factor. Proper thromboprophylaxis is key to prevent VTE in patients with cancer, and proper treatment is essential to reduce VTE complications and adverse events associated with the therapy.

DESIGN AND SETTINGS:

As a result of an initiative of the Ministry of Health of Saudi Arabia, an expert panel led by the Saudi Association for Venous Thrombo-Embolicism (a subsidiary of the Saudi Thoracic Society) and the Saudi Scientific Hematology Society with the methodological support of the McMaster University working group produced this clinical practice guideline to assist health care providers in evidence-based clinical decision-making for VTE prophylaxis and treatment in patients with cancer.

METHODS:

Six questions related to thromboprophylaxis and antithrombotic therapy were identified and the corresponding recommendations were made following the GRADE (Grading of Recommendations, Assessment, Development and Evaluation) approach.

RESULTS:

Question 1. Should heparin versus no heparin be used in outpatients with cancer who have no other therapeutic or prophylactic indication for anticoagulation ...

Journal: Annals of Saudi Medicine

Year of Publication: 2015

Publication issue: 35(2)

Page numbers: 95-106

SHORTLINK: bit.ly/28k0zaU

Title: Response to imatinib therapy in adult patients with chronic myeloid leukemia in Saudi population: A single-center study

Author(s): Alsobhi, E., Abrar, M. B., Abdelaal, M., Alsaeed, A., Absi, A., et al.

Affiliation: Pathology and Laboratory Medicine; ²⁻⁵ Princess Noura Oncology Center, King Abdulaziz Medical City, Jeddah; King Saud Bin Abdulaziz University for Health Sciences, King Abdulaziz Medical City, Jeddah, Saudi Arabia.

Abstract:

No study has been published yet in the Arab world regarding response and outcome of imatinib in patients with chronic myeloid leukemia (CML). This study evaluated a total of 122 patients with CML treated with imatinib between 2001 and 2012. Survival, hematologic, cytogenetic and molecular responses and adverse events were assessed. The 5-year overall survival (OS), event free survival (EFS) and progression-free survival (PFS) rates were: $95.4 \pm 2.3\%$, $81.4 \pm 4.6\%$ and $90.8 \pm 3.2\%$, respectively. Significant differences in OS ($p = 0.001$), EFS ($p = 0.001$) and PFS ($p = 0.001$) were noted when patients were stratified by cytogenetic response. Survival by Sokal risk groups was not significant ($p = 0.293$). Complete hematologic response was achieved in 94 patients (93.1%), cytogenetic response in 84 (83.2%), major molecular response in 62 (61.4%) and complete molecular response in 34 (33.7%). This article presents the first evidence on the effectiveness of imatinib in patients with CML from Saudi Arabia and highlights similarities and differences in response patterns in published studies.

Journal: Leukemia and Lymphoma

Year of Publication: 2015

Publication issue: 56(4)

Page numbers: 882-886

SHORTLINK: bit.ly/1TVhKG8

Title: Gestational trophoblastic neoplasia: treatment outcomes from a single institutional experience

Author(s): Al-Husaini, H., Soudy, H., Darwish, A., Ahmed, M., Eltigani, A., et al.

Affiliation: ^{1-2,4} Medical Oncology Consultant, King Faisal Cancer Center, King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia; Oncology Department, Dr. Soliman Fakeeh Hospital, Jeddah, Saudi Arabia; National Guard Hospital, Riyadh, Saudi Arabia; et al.

Abstract:

PURPOSE:

To report the outcomes of gestational trophoblastic neoplasia (GTN) at a single institution and to determine the factors affecting response to chemotherapy and survival.

METHODS/PATIENTS:

From 1979-2010, we retrospectively reviewed the data of 221 patients treated at our center. GTN Patients were assigned to low-risk (score ≤ 6) or high-risk (score ≥ 7) based on the WHO risk factor scoring system. Overall survival (OS) probabilities were estimated using Kaplan-Meier method. Logistic regression was applied to study the impact of different factors on the response to initial therapy.

RESULTS:

Patients' OS rate was 97 %. Median age at diagnosis was 37 year. 131 (59 %) patients had low-risk and 88 (40 %) cases had high-risk GTN. Complete remission rates to initial chemotherapy in low-risk group were 53 % and 87 % for single-agent methotrexate or dactinomycin, respectively. In high-risk group, 94 % achieved complete remission to initial chemotherapy with etoposide, methotrexate, dactinomycin, cyclophosphamide, and vincristine (EMA-CO). Etoposide, cisplatin, and dactinomycin as primary therapy in high-risk patients was successful in 70 %, while bleomycin, etoposide, and cisplatin (BEP) was successful in 53 % of cases. Salvage chemotherapy, surgical intervention or radiation therapy resulted in overall complete remission of 90 % in low-risk and 73 % in high-risk groups. Factors associated with resistance to initial chemotherapy were advanced-stage III/IV ($p = 0.005$), metastatic site other than lung or vagina ($p = 0.005$) and high-risk prognostic score ($p = 0.05$). OS was significantly influenced by the type of antecedent pregnancy (molar 98 % vs. others 93 %; $p = 0.04$), FIGO stage (I, II 100 % vs. III, IV 94 %; $p = 0.02$), score (low-risk 100 % vs. high-risk 92 %; $p = 0.01$), and site of metastasis (lung/vagina 98 % vs. others 85 %; $p = 0.002$).

CONCLUSIONS:

GTNs have excellent prognosis if properly treated at experienced centers. Single-agent dactinomycin seems more effective for low-risk GTN. EMA-CO remains the preferred primary treatment regimen for high-risk group. The excellent outcome reflects the success of salvage therapy.

Journal: Clinical & Translational Oncology

Year of publication: 2015

Volume: 17(5)

Page numbers: 409-415

SHORTLINK: bit.ly/1WEBLGL

Title: Behcet's disease presenting as intracranial hypertension due to cerebral venous thrombosis

Author(s): Al Abdulsalam, O., Al Habash, A., Malik, F. & Aldamanhori, I.

Affiliation: ¹⁻³ College of Medicine, University of Dammam, Dammam, Saudi Arabia; ¹ Department of Ophthalmology, King Abdulaziz Hospital, Al Ahsa, National Guard Health Affairs, Saudi Arabia; College of Medicine, University of Dammam, Dammam, Saudi Arabia.

Abstract:

The non-parenchymal central nervous system's (CNS) involvement in Behcet's disease (BD) is considered rare. We herein report a case of BD complicated by intracranial hypertension (ICH) due to cerebral venous thrombosis (CVT) in a 25-year-old Saudi male. Our patient presented with a four-week history of increasingly severe headache, nausea and diplopia, which were preceded by previous recurrent intermittent oral and genital ulcers, history suggestive of acneiform lesions and arthralgia over the past two years. Ophthalmic examination disclosed normal visual acuity (20/20) in both eyes with bilateral 6th nerve palsy and papilledema. Both eyes showed no signs of anterior or posterior segment inflammation. Oral and genital ulcers were found on physical examination with no other lesions. Magnetic resonance imaging (MRI) and magnetic resonance venography (MRV) of the brain showed lack of flow in the right transverse and sigmoid dural sinuses suggestive of venous thrombosis. On lumbar puncture, the opening pressure was greatly raised. After a comprehensive screening for prothrombotic conditions, a diagnosis of BD with ICH due to CVT was made. The patient was then treated by oral prednisolone, azathioprine, colchicine, cyclosporine, as well as anticoagulation, which resulted in significant clinical improvement.

Journal: Saudi Journal of Ophthalmology

Year of Publication: 2015

Publication issue: 29(1)

Page numbers: 81-84

SHORTLINK: bit.ly/1YciUCy

Title: Novel mutations in TNFRSF7/CD27: Clinical, immunologic, and genetic characterization of human CD27 deficiency

Author(s): Alkhairy, O. K., Perez-Becker, R.; Driessen, G. J., Abolhassani, H., van Montfrans, J., et al.

Affiliation: Department of Pathology and Laboratory Medicine, King Abdulaziz Medical City, Riyadh, Saudi Arabia; HELIOS Clinic Krefeld, Krefeld, Germany; Subdepartment of Pediatric Infectious Disease and Immunology, Rotterdam, The Netherlands; Karolinska Institutet at Karolinska University Hospital Huddinge, Stockholm, Sweden; Wilhelmina Children's Hospital/University Medical Center Utrecht, Utrecht, The Netherlands; et al.

Abstract:

BACKGROUND:

The clinical and immunologic features of CD27 deficiency remain obscure because only a few patients have been identified to date.

OBJECTIVE:

We sought to identify novel mutations in TNFRSF7/CD27 and to provide an overview of clinical, immunologic, and laboratory phenotypes in patients with CD27 deficiency.

METHODS:

Review of the medical records and molecular, genetic, and flow cytometric analyses of the patients and family members were performed. Treatment outcomes of previously described patients were followed up.

RESULTS:

In addition to the previously reported homozygous mutations c.G24A/p.W8X (n = 2) and c.G158A/p.C53Y (n = 8), 4 novel mutations were identified: homozygous missense c.G287A/p.C96Y (n = 4), homozygous missense c.C232T/p.R78W (n = 1), heterozygous nonsense c.C30A/p.C10X (n = 1), and compound heterozygous c.C319T/p.R107C-c.G24A/p.W8X (n = 1). EBV-associated lymphoproliferative disease/hemophagocytic lymphohistiocytosis, Hodgkin lymphoma, uveitis, and recurrent infections were the predominant clinical features. Expression of cell-surface and soluble CD27 was significantly reduced in patients and heterozygous family members. Immunoglobulin substitution therapy was administered in 5 of the newly diagnosed cases.

CONCLUSION:

CD27 deficiency is potentially fatal and should be excluded in all cases of severe EBV infections to minimize diagnostic delay. Flow cytometric immunophenotyping offers a reliable initial test for CD27 deficiency. Determining the precise role of CD27 in immunity against EBV might provide a framework for new therapeutic concepts.

Journal: Journal of Allergy and Clinical Immunology

Year of Publication: 2015

Publication issue: 136(3)

Page numbers: 703

SHORTLINK: bit.ly/25LZ1Es

Title: Two Novel Homozygous Missense Mutations in the GDF5 Gene Cause Brachydactyly Type C

Author(s): Al-Qattan, M. M., Al-Motairi, M. I. & Al Balwi, M. A.

Affiliation: ¹⁻² Department of Surgery, King Saud University, Riyadh, Saudi Arabia; Department of Pathology and Laboratory Medicine, King Abdulaziz Medical City, Riyadh, Saudi Arabia.

Abstract:

Mutations of the GDF5 gene cause a variable phenotype including brachydactyly type C. A review of the literature showed that it is caused either by heterozygous frameshift mutations within the prodomain or heterozygous missense/nonsense mutations within the active domain. Only a single patient with a homozygous mutation (c.517A > G, which predicts p. Met173Val) has been reported in this disorder. In this paper, we report two children with novel homozygous missense mutations in the GDF5 gene associated with brachydactyly type C: one mutation was within the region coding for the prodomain (c.608C > A, which predicts p. Thr203Asn) and the other was within the region coding for the active domain (c.1456 G > A, which predicts p. Val486Met). The genotype-phenotype correlations in the mutational spectrum of the GDF5 gene are discussed.

Journal: American Journal of Medical Genetics Part A

Year of Publication: 2015

Publication issue: 167(7)

Page numbers: 1621-1626

SHORTLINK: bit.ly/28k1Kr4

Title: Pancreatic fine-needle aspiration cytopathology: An analysis of the CAP NGC program for pancreatic FNA 2003-2011

Author(s): Kurtycz, D. F. I., Tabatabai, Z. L., Khalbuss, W. E., Souers, R., et al.

Affiliation: Wisconsin State Laboratory of Hygiene, University of Wisconsin-Madison, Wisconsin; University of California San Francisco, California; University of Pittsburgh, Pennsylvania; National Guard Health Affairs Hospital, Riyadh, Department of Pathology and Laboratory Medicine; Riyadh, Saudi Arabia; et al.

Abstract:

Introduction: The College of American Pathologists monitors quality in cytologic analysis in its non-gynecologic cytology sample program. We report the performance of participating laboratories in pancreatic fine needle aspiration sample analysis.

Materials and methods: We evaluated 23,079 responses to 392 pancreatic fine-needle aspiration slide challenges that were collected between January 6, 2003 and December 31, 2011. The analysis examined concordance to the reference diagnosis as well as performance of conventional Papanicolaou smears, Romanowsky smears, CytoSpin and ThinPrep preparations. A nonlinear mixed model was fit with 3 factors: reference diagnosis, reader type, and preparation type.

Results: Overall concordance rate was 93.2%, 94.8% for ductal adenocarcinoma, and 96.2% for interpretation of malignancy in cases of neuroendocrine tumors. There was no difference in performance between pathologists and cytotechnologists. In negative/benign preparations, there was a 76.3% concordance to the reference diagnosis. There was 89.2% sensitivity for diagnosis of malignancy when adenocarcinoma was present and 72.8% specificity for a benign non-neoplastic diagnosis with a tendency to overcall and demonstrate insecurity by providing a number of incorrect diagnoses for benign entities. Sensitivity of an exact diagnosis of neuroendocrine lesion when a neuroendocrine tumor is present was 79%. Concordance for diagnosis of mucinous cystic neoplasm without cytologic atypia was problematic at 46.4% with participants yielding an erroneous interpretation of adenocarcinoma one-third of the time.

Conclusions: Participants performed well in recognizing adenocarcinoma, but they overcalled negative samples. Findings can provide focus for education and suggest that efforts be directed at benign pancreatic samples, neuroendocrine cytomorphology, and mucinous neoplasms.

Journal: Journal of the American Society of Cytopathology

Year of Publication: 2015

Publication issue: 4(6)

Page numbers: 327-334

SHORTLINK: bit.ly/1RX0Jt9

Title: Sensitive, resistant and multi-drug resistant *Acinetobacter baumannii* at Saudi Arabia hospital eastern region

Author(s): Ahmed, M. U., Farooq, R., Al-Hawashim, N., Ahmed, M., Yiannakou, N., et al.

Affiliation: Microbiology & Serology, King Abdulaziz Hospital, Al-Ahsa, KSA; College of Nursing, King Saud bin Abdulaziz University, Al-Ahsa, KSA; Pathology & Laboratory Medicine, King Abdulaziz Hospital, Al-Ahsa, Saudi Arabia; Al-Moosa General Hospital, Al-Ahsa, KSA; Microbiology, King Abdulaziz Hospital, Al-Ahsa, Saudi Arabia; et al.

Abstract:

Since the Physicians start use of antibiotics long ago with un-notice drug resistance. However actual problem was recognized about 85 years ago. Antibiotic resistant and Multi-drug resistant bacterial strains are at rise throughout the world. It is physicians and researchers to take scientific research based appropriate action to overcome this ever-spreading problem. This study is designed to find out sensitive (S), resistant (R) and multi-drug resistant (MDR) *Acinetobacter baumannii* strain along with other isolates in the resident patients of Eastern Region of Saudi Arabia. *Pseudomonas aeruginosa* is excluded from other gram-negative organisms isolated from different sites as it will be dealt separately. This study is based in was retrospective observations designed to collect data of different stains of *Acinetobacter baumannii* with reference to their Sensitivity (S), Resistance (R), Multi-Drug Resistance (MDR) along with other Gram negative isolated from different sites (from 1st January 2004 to 31st December 2011) at King Abdulaziz Hospital located Eastern Region of Saudi Arabia (KSA). All necessary techniques were used to culture and perform sensitivity of these isolates. There were 4532 isolates out of which 3018 (67%) were from patients. Out of *Acinetobacter baumannii* infected were 906 (20%) while other 3626 (80%) isolates were miscellaneous. Numbers of patients or cases were 480 (53%) out of 906 isolates and numbers of patients or cases in other organisms were 2538 (70%) out of 3626 isolates. *Acinetobacter baumannii* infected patients 221 (46%) were male and 259 (54%) were female and the male and female ratio of 1:1.2. In other organisms this male female ratio was almost same. There was steady rise in number of patients and the hence the isolates from 2004 to 2011. Majority of the bacterial strains were isolated as single organism but some were isolated as double or triple or quadruple or more organisms from different sites. Sensitive, Resistant and Multi-Drug Resistant *Acinetobacter baumannii* have been isolated from different sites. The other Gram negative isolates included *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus vulgaris*, *Klebsiella oxytoca*, *Serratia marcescens* and *Stenotrophomonas maltophilia*. A significant rise in R and MDR but there is rise in R and MDR *Acinetobacter baumannii* Strains has been interceded other isolates. It is important to adopt proper and sustainable policies and guideline regarding antibiotics prescription and used. We should also check our infection control practices in our hospital or healthcare settings. We should start antibiotics stewardship in our hospital in order to reducing or overcoming antibiotics Resistant (R) and Multi-Drug Resistant (MDR) strains prevalence.

Journal: Pakistan Journal of Pharmaceutical Sciences

Year of Publication: 2015

Publication issue: 28(3)

Page numbers: 825-832

SHORTLINK: bit.ly/1UosJHK

Title: The UK10K project identifies rare variants in health and disease

Author(s): Walter, K., Min, J. L., Huang, J., Crooks, J. ... Al Turki, S., et al

Affiliation: Wellcome Trust Genome Campus, Cambridge, UK; University of Cambridge, UK. School of Social and Community Medicine, University of Bristol, UK; Sheffield Children's NHS Foundation Trust, Sheffield UK; Department of Pathology, King Abdulaziz Medical City, Riyadh, Saudi Arabia.

Abstract:

The contribution of rare and low-frequency variants to human traits is largely unexplored. Here we describe insights from sequencing whole genomes (low read depth, 73) or exomes (high read depth, 803) of nearly 10,000 individuals from population-based and disease collections. In extensively phenotyped cohorts we characterize over 24 million novel sequence variants, generate a highly accurate imputation reference panel and identify novel alleles associated with levels of triglycerides (APOB), adiponectin (ADIPOQ) and low-density lipoprotein cholesterol (LDLR and RGAG1) from single-marker and rare variant aggregation tests. We describe population structure and functional annotation of rare and low-frequency variants, use the data to estimate the benefits of sequencing for association studies, and summarize lessons from disease-specific collections. Finally, we make available an extensive resource, including individual-level genetic and phenotypic data and web-based tools to facilitate the exploration of association results.

Journal: Nature

Year of Publication: 2015

Publication issue: 526(7571)

Page numbers: 82-+.

SHORTLINK: bit.ly/1TVi73G

Title: Community-associated methicillin-resistant *Staphylococcus aureus* causing diffuse xanthogranulomatous pyelonephritis in a neonate

Author(s): Al-Otaibi, A., Al-Shaalan, M., Al-Jadaan, S. & Alsaad, K. O.

Affiliation: Department of Pediatric, King Abdulaziz Medical City, King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia; Department of Surgery, King Abdulaziz Medical City, Saudi Arabia; Department of Pathology and Laboratory Medicine, King Abdulaziz Medical City, Saudi Arabia.

Abstract:

Xanthogranulomatous pyelonephritis (XGP) is an uncommon variant of chronic pyelonephritis; often associated with ipsilateral urological obstructive pathology and infection. It occurs rarely in the pediatric population and is caused usually by gram-negative bacteria. We herein present a case of a 6-week old male patient who presented with fever, gross hematuria and left flank tenderness. Urine and blood cultures were negative. Radiological investigations suggested an infiltrating malignant neoplasm of the kidney. There was no evidence of nephrolithiasis or obstructive pathology. A left radical nephrectomy was performed and histopathological examination revealed diffuse XGP. Microbiological culture of the perinephric purulent discharge proved positive for methicillin-resistant *Staphylococcus aureus* (MRSA). To the best of our knowledge, this is the first reported case of MRSA-induced XGP in a neonate emphasizing the expanding spectrum of disease secondary to community-associated MRSA.

Journal: Journal of Pediatric Surgery Case Reports

Year of Publication: 2015

Publication issue: 3(8)

Page numbers: 327-330

SHORTLINK: bit.ly/1U7fyxz

Title: Regulatory T-cell deficiency and immune dysregulation, polyendocrinopathy, enteropathy, X-linked-like disorder caused by loss-of-function mutations in LRBA

Author(s): Charbonnier, L. M., Janssen, E., Chou, J., ... Akangari, A. A., Al-Zahrani, D., et al.

Affiliation: Boston Children's Hospital, Harvard Medical School, Boston, USA; Department of Molecular Biology, Massachusetts General Hospital, Boston, USA; Department of Pediatrics, University of California at Los Angeles, Los Angeles, USA; Department of Pediatrics, College of Medicine, King Saud University, Riyadh, Saudi Arabia; Immunology and Allergy, Pediatric Department, King Abdulaziz Medical City, Jeddah, Saudi Arabia; et al.

Abstract:

BACKGROUND:

A number of heritable immune dysregulatory diseases result from defects affecting regulatory T (Treg) cell development, function, or both. They include immune dysregulation, polyendocrinopathy, enteropathy, X-linked (IPEX) syndrome, which is caused by mutations in forkhead box P3 (FOXP3), and IPEX-like disorders caused by mutations in IL-2 receptor α (IL2RA), signal transducer and activator of transcription 5b (STAT5b), and signal transducer and activator of transcription 1 (STAT1). However, the genetic defects underlying many cases of IPEX-like disorders remain unknown.

OBJECTIVE:

We sought to identify the genetic abnormalities in patients with idiopathic IPEX-like disorders.

METHODS:

We performed whole-exome and targeted gene sequencing and phenotypic and functional analyses of Treg cells.

RESULTS:

A child who presented with an IPEX-like syndrome and severe Treg cell deficiency was found to harbor a nonsense mutation in the gene encoding LPS-responsive beige-like anchor (LRBA), which was previously implicated as a cause of common variable immunodeficiency with autoimmunity. Analysis of subjects with LRBA deficiency revealed marked Treg cell depletion; profoundly decreased expression of canonical Treg cell markers, including FOXP3, CD25, Helios, and cytotoxic T lymphocyte-associated antigen 4; and impaired Treg cell-mediated suppression. There was skewing in favor of memory T cells and intense autoantibody production, with marked expansion of T follicular helper and contraction of T follicular regulatory cells. Whereas the frequency of recent thymic emigrants and the differentiation of induced Treg cells were normal, LRBA-deficient T cells exhibited increased apoptosis and reduced activities of the metabolic sensors mammalian target of rapamycin complexes 1 and 2.

CONCLUSION:

LRBA deficiency is a novel cause of IPEX-like syndrome and Treg cell deficiency associated with metabolic dysfunction and increased apoptosis of Treg cells.

Journal: Journal of Allergy and Clinical Immunology

Year of Publication: 2015

Publication issue: 135(1)

Page numbers: 217-227

SHORTLINK: bit.ly/1UeSpdV

Title: Is type 1 diabetes mellitus a cause for subtle hearing loss in pediatric patients?

Author(s): Aldajani, N., Alkurdi, A., AlMutair, A., Al Draiwesh, A. & Al Mazrou, K. A.

Affiliation: ^{1-2,4-5} Department of Otorhinolaryngology, King Abdulaziz Medical City, Riyadh, Saudi Arabia; Department of Pediatric, King Abdulaziz Medical City, Riyadh, Saudi Arabia.

Abstract:

The objective of this study is to investigate the effects of IDDM on the function of the auditory pathway from the cochlea to the auditory cortex in child patients. Totally, 140 ears of 70 children with IDDM and 60 ears of 30 age and gender-matched healthy controls were included in the study. The ages of patients and controls ranged from 4 to 14 years. Audiological assessment including pure-tone audiometry, otoacoustic emission testing (OAE) and auditory brainstem response testing (ABR) has been performed to all participants. There was no significant difference between the patients and controls regarding pure-tone thresholds on audiometry ($p > 0.05$). The latencies of waves I, III and V on ABR were not significantly different between the patients and controls ($p > 0.05$). The amplitudes on DPOAE testing obtained from both groups were not significantly different at the frequencies of 2,000 and 4,000 Hz ($p > 0.05$). However, the DPOAE amplitudes of the patients at 1,000 Hz were significantly lower than those of controls at the same frequency ($p = 0.03$). There was no difference between the patients who had chronic disease (>5 years) and healthy controls regarding pure-tone audiometry, ABR and DPOAE testing results ($p > 0.05$). In the light of the findings obtained with pure-tone audiometry, and OAE and ABR testing, it seems that auditory system is spared in children with IDDM at clinical level. Diabetes control and chronicity of the disease do not impact on the auditory system except for a subclinical involvement in the apical portion of the cochlea.

Journal: European Archives of Oto-Rhino-Laryngology

Year of Publication: 2015

Publication issue: 272(8)

Page numbers: 1867-1871

SHORTLINK: bit.ly/25M19MA

Title: Birth prevalence of non-syndromic orofacial clefts in Saudi Arabia and the effects of parental consanguinity

Author(s): Sabbagh, H. J., Innes, N. P., Sallout, B. I., Alamoudi, N. M., Hamdan, M. A., et al.

Affiliation: Division of Oral Health Sciences; Pediatric Dentistry, University of Dundee, Scotland, Maternal-Fetal Medicine Department; King Abdulaziz Medical City Riyadh, Pediatric Dentistry; Women's Specialized Hospital, King Fahad Medical City, Riyadh, Saudi Arabia; et al.

Abstract:

Objectives: To describe the characteristics and prevalence of non-syndromic orofacial clefting (NSOFC) and assess the effects of parental consanguinity on NSOFC phenotypes in the 3 main cities of Saudi Arabia.

Methods: All infants (114,035) born at 3 referral centers in Riyadh, and 6 hospitals in Jeddah and Madinah between January 2010 and December 2011 were screened. The NSOFC cases (n=133) were identified and data was collected through clinical examination and records, and information on consanguinity through parent interviews. The diagnosis was confirmed by reviewing medical records and contacting the infants' pediatricians. Control infants (n=233) matched for gender and born in the same hospitals during the same period, were selected.

Results: The prevalence of NSOFC was 1.07/1000 births in Riyadh, and 1.17/1000 births overall; cleft lip (CL) was 0.47/1000 births, cleft lip and palate (CLP) was 0.42/1000 births, and cleft palate (CP) was 0.28/1000 births. Cleft palate was significantly associated with consanguinity ($p=0.047$, odds ratio: 2.5, 95% confidence interval: 1 to 6.46), particularly for first cousin marriages.

Conclusion: The birth prevalence of NSOFC in Riyadh alone, and in the 3 main cities of Saudi Arabia were marginally lower than the mean global prevalence. While birth prevalence for CLP was comparable to global figures, the CL:CLP ratio was high, and only CP was significantly associated with consanguinity.

Journal: Saudi Medical Journal

Year of Publication: 2015

Publication issue: 36(9)

Page numbers: 1076-1083

SHORTLINK: bit.ly/1U7i3js

Title: Expanding the Genetic and Phenotypic Spectrum of Popliteal Pterygium Disorders

Author(s): Leslie, E. J., O'Sullivan, J., Cunningham, M. L., Singh, A. ... Abaneh, F., et al.

Affiliation: Department of Pediatrics, University of Iowa, Iowa; Manchester Academic Health Sciences Centre, University of Manchester, UK; University of Washington and Seattle Children's Craniofacial Center, Washington; Institute of Medical Sciences, Banaras Hindu University, India; Department of Pediatrics, King Abdul Aziz Medical City, Riyadh, Saudi Arabia; et al.

Abstract:

The popliteal pterygia syndromes are a distinct subset of the hundreds of Mendelian orofacial clefting syndromes. Popliteal pterygia syndromes have considerable variability in severity and in the associated phenotypic features but are all characterized by cutaneous webbing across one or more major joints, cleft lip and/or palate, syndactyly, and genital malformations. Heterozygous mutations in IRF6 cause popliteal pterygium syndrome (PPS) while homozygous mutations in RIPK4 or CHUK (IKKA) cause the more severe Bartsocas–Papas syndrome (BPS) and Cocoon syndrome, respectively. In this study, we report mutations in six pedigrees with children affected with PPS or BPS. Using a combination of Sanger and exome sequencing, we report the first case of an autosomal recessive popliteal pterygium syndrome caused by homozygous mutation of IRF6 and the first case of uniparental disomy of chromosome 21 leading to a recessive disorder. We also demonstrate that mutations in RIPK4 can cause features with a range of severity along the PPS-BPS spectrum and that mutations in IKKA can cause a range of features along the BPS-Cocoon spectrum. Our findings have clinical implications for genetic counseling of families with pterygia syndromes and further implicate IRF6, RIPK4, and CHUK(IKKA) in potentially interconnected pathways governing epidermal and craniofacial development.

Journal: American Journal of Medical Genetics Part A

Year of Publication: 2015

Publication issue: 167(3)

Page numbers: 545-552

SHORTLINK: bit.ly/1VM9BZp

Title: Applicability of Adult Guidelines for Withholding or Terminating Resuscitation for Prehospital Traumatic Cardiopulmonary Arrest in Pediatrics

Author(s): Bawazeer, M. S., Al Alawyat, H. & Zamakhshary. M.

Affiliation: ^{1,2} Department of Pediatric, King Abdulaziz Medical City, Riyadh, Saudi Arabia; Department of Pediatric Surgery, Ministry of Health, Riyadh, Saudi Arabia.

Abstract:

PURPOSE:

The aim of this study is to assess the applicability to a pediatric population of adult guidelines for withholding or terminating traumatic cardiopulmonary resuscitation (CPR).

METHOD:

Using a trauma registry database and patient data from May 2001 to February 2011, a retrospective cohort study was conducted for all trauma patients less than 18 years of age who arrived at the emergency department (ED) with no pulse at King Abdulaziz Medical City in Riyadh. The clinical criteria of the adult guidelines were applied to the study population; these criteria include an absence of pulse, apnea, unorganized electrocardiogram and fixed pupils (all observed at the scene). Then the outcomes of the studied patients were interpreted based on these guidelines; this analysis highlighted the relationship between the outcomes and the four clinical criteria of the adult guidelines.

RESULTS:

During the study period, 104 patients arrived at the ED with no pulse. CPR was initiated for only 44 of these patients. Unfortunately, every patient in this group died within 24 hours of ED arrival. Out of these 104 patients, 92 met the four clinical criteria of the adult guidelines, 11 met only three criteria, and one met only two criteria.

CONCLUSION:

The clinical criteria of the previously published adult guidelines for terminating or withholding resuscitation correctly predicted 100% of the patient mortality when all criteria were met.

Journal: European Journal of Pediatric Surgery

Year of Publication: 2015

Publication issue: 25(2)

Page numbers: 206-211

SHORTLINK: bit.ly/1tgUfkJ

Title: Characteristics of pediatric diabetic ketoacidosis patients in Saudi Arabia

Author(s): Naeem, M. A., Al-Alem, H. A., Al-Dubayee, M. S., Al-Juraibah, F. N., Omair, A., et al.

Affiliation: ¹⁻² Division of Pediatric Intensive Care Unit, ³⁻⁴ Division of Pediatric Endocrinology, Department of Pediatrics, King Abdulaziz Medical City, College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

OBJECTIVES:

To evaluate the clinical and biochemical characteristics of children with diabetic ketoacidosis (DKA).

METHODS:

In this retrospective study conducted between June 2012 and November 2013 at the King Abdulaziz Medical City, Riyadh, Saudi Arabia, we evaluated pediatric DKA admissions from 1995-2008 (Phase 1). From the case files, we obtained information related to patients' age, gender, weight, presenting complaints, serum biochemical profile, and management.

RESULTS:

This study included 373 DKA admissions with a median age of 11 years (interquartile range [IQR]: 8-13). The patients in the subgroup of age more than 10 years old had the highest proportion of admissions (n=250, 67%, p< 0.000). The median duration of diagnosis of diabetes mellitus (DM) was 3 years (IQR: 2-6). New-onset DM was 47%. Predominant precipitating cause was acute illness, mostly viral syndrome in 22% of all cases, and non-compliance to insulin regimen was in 79% of the diagnosed diabetic cases. Blood glucose, pH, anion gap, serum osmolality, serum potassium, and serum phosphate showed the highest change during the initial 6 hours of management, while trends of serum bicarbonate and blood urea nitrogen demonstrated a predominant change in the initial 12 hours.

CONCLUSION:

The notable findings in this study, such as, higher mean age of presentation, high rate of non-compliance to insulin as the cause of precipitation, and a high prevalence of abdominal pain at presentation should be followed up with further comparative studies.

Journal: Saudi Medical Journal

Year of Publication: 2015

Publication issue: 36(1)

Page numbers: 20-25

SHORTLINK: bit.ly/1t8CG5Q

Title: Childhood scurvy: an unusual cause of refusal to walk in a child

Author(s): Alqanatish, J. T., Alqahtani, F., Alsewari, W. M. & Al-Kenaizan, S.

Affiliation: ¹⁻² Department of Pediatrics, King Abdulaziz Medical City and King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Department of Dermatology, King Abdulaziz Medical City and King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Scurvy, or vitamin C deficiency, is rarely presented to a rheumatology clinic. It can mimic several rheumatologic disorders. Although uncommon, it may present as pseudovasculitis or chronic arthritis. Scurvy still exists today within certain populations, particularly in patients with neurodevelopmental disabilities, psychiatric illness or unusual dietary habits. Scurvy presentation to the rheumatologist varies from aches and mild pains to excruciating bone pain or arthritis. Musculoskeletal and mucocutaneous features of scurvy are often what prompts referrals to pediatric rheumatology clinics. Unless health care providers inquire about nutritional habits and keep in mind the risk of nutritional deficiency, it will be easy to miss the diagnosis of scurvy. Rarity of occurrence as compared to other nutritional deficiencies, combined with a lack of understanding about modern-day risk factors for nutritional deficiency, frequently leads to delayed recognition of vitamin C deficiency. We report a case of scurvy in a mentally handicapped Saudi child, who presented with new onset inability to walk with diffuse swelling and pain in the left leg. Skin examination revealed extensive ecchymoses, hyperkeratosis and follicular purpura with corkscrew hairs, in addition to gingival swelling with bleeding. Clinical diagnosis of scurvy was rendered and confirmed by low serum vitamin C level. The patient did extremely well with proper nutritional support and vitamin C supplementation. It has been noticed lately that there is increased awareness about scurvy in rheumatology literature. A high index of suspicion, together with taking a thorough history and physical examination, is required for diagnosis of scurvy in patient who presents with musculoskeletal symptoms. Nutritional deficiency should also be considered by the rheumatologist formulating differential diagnosis for musculoskeletal or mucocutaneous complaints in children, particularly those at risk.

Journal: Pediatric Rheumatology

Year of Publication: 2015

Publication issue: 13

Page numbers: -

SHORTLINK: bit.ly/1WEFpAo

Title: Dual bolus intravenous contrast injection technique for multiregion paediatric body CT

Author(s): Thomas, K. E., Mann, E. H., Padfield, N, Greco, G. ... Alzahrani, A., et al.

Affiliation: ¹⁻⁴ Department of Diagnostic Imaging, Hospital for Sick Children, Toronto, Canada; King Abdulaziz Medical City, Riyadh, Saudi Arabia; et al.

Abstract:

Objectives: Optimal vascular and parenchymal enhancement for multi-region paediatric body computed tomography (CT) has many challenges. A variety of approaches are currently employed, associated with varying image quality and radiation dose implications. We present a dual bolus intravenous (DBI) contrast technique for single-acquisition imaging of the chest, abdomen and pelvis, with evaluation of multicompartmental vascular enhancement.

Methods: A DBI regime was designed for use with a programmable dual head pump injector. A larger initial bolus (two-thirds volume) is followed by a smaller bolus (one-third volume) before imaging the chest, abdomen and pelvis in a single acquisition, 45–65 seconds from the start of initial injection. Flow rates and second bolus timing were tailored to patient weight and contrast volume, using five weight categories. Multi-compartmental vascular opacification was graded and image quality was assessed in a cohort of 130 patients.

Results: The DBI technique resulted in concordant multicompartmental (thoracic aortic, pulmonary arterial, abdominal aortic and portal venous) vascular enhancement. Early splenic parenchymal enhancement artefacts and alterations to renal enhancement were observed.

Conclusion: We present a weight-stratified dual bolus intravenous contrast technique to improve image quality in paediatric multi-region body CT.

Journal: European Radiology

Year of Publication: 2015

Publication issue: 25(4)

Page numbers: 1014-1022

SHORTLINK: bit.ly/1PHzx7a

Title: High-dose Chemotherapy With Autologous Stem Cell Rescue in Saudi Children Less Than 3 Years of Age With Embryonal Brain Tumors

Author(s): Alsultan, A., Alharbi, M., Al-Dandan, S., Bayyoumi, Y., Alharbi, T., et al.

Affiliation: ^{1,5} Department of Oncology, King Abdulaziz Medical City, Department of Pediatrics, College of Medicine, King Saud University; Department of Pediatric Hematology Oncology, Comprehensive Cancer Centre; Department of Pathology, Department of Radiation Oncology, King Fahad Medical City, Riyadh, Saudi Arabia; et al.

Abstract:

High-dose chemotherapy with autologous stem cell rescue (HDC/ASCR) has been used in children under the age of 3 years with embryonal brain tumors to avoid or delay the use of radiation. We reviewed the medical records of 10 Saudi children less than 3 years of age with embryonal brain tumors who underwent HDC/ASCR. All 10 patients underwent surgical resection followed by 3 to 5 cycles of induction chemotherapy and 1 to 3 cycles of HDC/ASCR using carboplatin and thiotepe. Isotretinoin was used as a maintenance therapy in 4 patients. Five patients had medulloblastoma, 3 had atypical teratoid/rhabdoid tumors, 1 had an embryonal tumor with abundant neuropil and true rosettes, and 1 had pineoblastoma. The median age of the patients was 1.9 years. A total of 19 HDC/ASCR procedures were performed. Radiotherapy (RT) was administered to 5 patients after HDC/ASCR and as a salvage therapy in 1 patient. The progression-free survival rate was 50% at 1 year and at 2 years, with a median follow-up of 24 months. All 5 patients with medulloblastoma are still alive without evidence of disease, but the other patients died secondary to tumor progression. This experience suggests that strategies combining myeloablative chemotherapy and autologous stem cell rescue appear to be feasible for children with embryonal brain tumors in the Middle East.

Journal: Journal of Pediatric Hematology Oncology

Year of Publication: 2015

Publication issue: 37(3)

Page numbers: 204-208

SHORTLINK: bit.ly/1ZxzVWh

Title: Joubert syndrome: a model for untangling recessive disorders with extreme genetic heterogeneity

Author(s): Bachmann-Gagescu, R., Dempsey, J. C., Phelps, I. G., O'Roak, I. G. ... Alswaid, A., et al.

Affiliation: University of Zurich, Zurich, Switzerland; ^{2,3,5} University of Washington, Washington, USA; Oregon Health and Science University, Oregon, USA; King Abdulaziz Medical City, Riyadh, Saudi Arabia; et al.

Abstract:

BACKGROUND:

Joubert syndrome (JS) is a recessive neurodevelopmental disorder characterized by hypotonia, ataxia, cognitive impairment, abnormal eye movements, respiratory control disturbances and a distinctive mid-hindbrain malformation. JS demonstrates substantial phenotypic variability and genetic heterogeneity. This study provides a comprehensive view of the current genetic basis, phenotypic range and gene-phenotype associations in JS.

METHODS:

We sequenced 27 JS-associated genes in 440 affected individuals (375 families) from a cohort of 532 individuals (440 families) with JS, using molecular inversion probe-based targeted capture and next-generation sequencing. Variant pathogenicity was defined using the Combined Annotation Dependent Depletion algorithm with an optimised score cut-off.

RESULTS:

We identified presumed causal variants in 62% of pedigrees, including the first B9D2 mutations associated with JS. 253 different mutations in 23 genes highlight the extreme genetic heterogeneity of JS. Phenotypic analysis revealed that only 34% of individuals have a 'pure JS' phenotype. Retinal disease is present in 30% of individuals, renal disease in 25%, coloboma in 17%, polydactyly in 15%, liver fibrosis in 14% and encephalocele in 8%. Loss of CEP290 function is associated with retinal dystrophy, while loss of TMEM67 function is associated with liver fibrosis and coloboma, but we observe no clear-cut distinction between JS subtypes.

CONCLUSIONS:

This work illustrates how combining advanced sequencing techniques with phenotypic data addresses extreme genetic heterogeneity to provide diagnostic and carrier testing, guide medical monitoring for progressive complications, facilitate interpretation of genome-wide sequencing results in individuals with a variety of phenotypes and enable gene-specific treatments in the future.

Journal: Journal of Medical Genetics

Year of Publication: 2015

Publication issue: 52(8)

Page numbers: 514-522

SHORTLINK: bit.ly/1UzOWT7

Title: Clinical characteristics of celiac disease and dietary adherence to gluten-free diet among Saudi children

Author(s): Sarkhy, A. A., El Mouzan, M. I., Saeed, E., Alanazi, A., Alghamdi, S., et al.

Affiliation: ¹⁻³ Department of Pediatrics, King Khalid University Hospital, King Saud University; ⁴ Department of Pediatrics, King Abdulaziz Medical City, Riyadh, ⁵ Department of Pediatrics, King Faisal Specialist Hospital and Research Center, Jeddah, Riyadh, Saudi Arabia; et al.

Abstract:

Purpose: To describe the clinical characteristics of celiac disease (CD) among Saudi children and to determine the adherence rate to gluten free diet (GFD) and its determinant factors among them.

Methods: A cross-sectional study was conducted, in which all the families registered in the Saudi Celiac Patients Support Group were sent an online survey. Only families with children 18 years of age and younger with biopsy-confirmed CD were included.

Results: The median age of the 113 included children was 9.9 years, the median age at symptom onset was 5.5 years and the median age at diagnosis was 7 years, the median time between the presentation and the final diagnosis was 1 year. Sixty two of the involved children were females. Ninety two percent of the patients were symptomatic at the diagnosis while eight percent were asymptomatic. The commonest presenting symptoms included: chronic abdominal pain (59.3%), poor weight gain (54%), abdominal distention, gases, bloating (46.1%) and chronic diarrhea (41.6%). Sixty percent of the involved children were reported to be strictly adherent to GFD. Younger age at diagnosis and shorter duration since the diagnosis were associated with a better adherence rate.

Conclusion: CD has similar clinical presentations among Saudi children compared to other parts of the ward; however, the adherence to GFD is relatively poor. Younger age at diagnosis and shorter duration since the diagnosis were associated with a better adherence rate.

Journal: Pediatric Gastroenterology, Hepatology and Nutrition

Year of Publication: 2015

Publication issue: 18(1)

Page numbers: 23-29

SHORTLINK: bit.ly/24z6rZa

Title: Prevalence of major congenital anomalies at King Fahad Medical City in Saudi Arabia: A tertiary care centre-based study

Author(s): Sallout, B., Obedat, N., Shakeel, F., Mansoor, A., Walker, M. & Al-Badr, A.

Affiliation: Maternal-Fetal Medicine and Ultrasound Unit, Women's Specialized Hospital, King Fahad Medical City, Riyadh, Saudi Arabia, Obstetrics and Gynecology Department, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia, Obstetrics and Gynecology Department, Faculty of Medicine, Jordan University of Science and Technology, Irbid, Jordan; Department of Obstetrics, Gynaecology and New-Born Care, Ottawa Hospital, Ottawa, Ontario, Canada.

Abstract:

BACKGROUND AND OBJECTIVES:

The prevalence of major congenital anomalies in Saudi Arabia is a largely understudied area. Knowing the prevalence of birth defects and their trends is important in identifying potential factors that are either causative or preventative. Early antenatal diagnosis of major congenital anomalies is important for possible termination of pregnancy, fetal or neonatal. We determined the prevalence of major congenital anomalies in our hospital population since implementation of an improved screening system.

PATIENTS AND METHODS:

This single-centre prospective cross-sectional study was conducted in a tertiary care hospital in Riyadh. A total of 63452 obstetrical ultrasound examinations were performed for 30632 female Saudi obstetric patients from the period of January 2007 to December 2012.

RESULTS:

A total of 1598 fetuses were diagnosed with major congenital anomalies, including 1064 (66.6 %) fetuses with isolated major anomalies and 534 (33.4%) fetuses with non-isolated major anomalies. The antenatal prevalence of congenital anomalies was 52.1 per 1000 pregnancies. The median maternal age at diagnosis was 29 years. The median gestational age at diagnosis was 30 weeks of gestation. Two hundred and eighty five cases (17.85%) had a previous family history of similar anomalies. The most commonly diagnosed anomalies involved the genitourinary system (652 cases). The birth prevalence of major congenital anomalies was 46.5 per 1000 live births.

CONCLUSION:

The prevalence of major congenital anomalies in our hospital population appears to be higher than international prevalences, with a high recurrence rate. Environmental, nutritional and social factors may be contributing to this phenomenon.

Journal: Annals of Saudi Medicine

Year of Publication: 2015

Publication issue: 35(5)

Page numbers: 343-351

SHORTLINK: bit.ly/1Od8Cjh

Title: Protein-induced hyperinsulinaemic hypoglycaemia due to a homozygous HADH mutation in three siblings of a Saudi family

Author(s): Babiker, O., Flanagan, S. E., Ellard, S., Al Girim, H., Hussain, K., et al.

Affiliation: ^{1,4} Paediatric Department, King Abdulaziz Hospital, National Guard Health Affairs, Al-Ahsa, Saudi Arabia; ²⁻³ Institute of Biomedical and Clinical Science, University of Exeter Medical School, Exeter, UK; Genetics and Genomic Medicine Programme, Great Ormond Street Hospital for Children, London, UK, et al.

Abstract:

Hyperinsulinaemic hypoglycaemia (HH) is caused by mutations in the key genes involved in regulation of insulin secretion from the pancreatic β -cells and mutations in ABCC8 and KCNJ11 are the most common causes of HH. Mutations in HADH (which encodes the enzyme 3-hydroxyacyl-CoA dehydrogenase) are a rare cause of HH. We report three siblings (21, 9, and 7 years old) from a consanguineous Saudi family with HH due to a homozygous mutation in HADH. All three siblings presented with HH in the 1st year of life. HH responded well to medical therapy (diazoxide/octreotide) although the 1st sibling suffered neurological damage. The protein load test revealed protein sensitivity in the 21-year-old proband, the oldest reported patient with HH secondary to a HADH mutation. Genetic analysis revealed a homozygous HADH splicing mutation (c.133-1G>A) in all three siblings. HADH mutations can present in later infancy or childhood with severe HH that is usually diazoxide responsive. Severe neurological complications such as epilepsy and developmental delay can be associated with HADH mutations. This is the 1st report of HH due to HADH mutation in an adult suggesting that HH could persist into adulthood possibly becoming milder over the years.

Journal: Journal of Pediatric Endocrinology and Metabolism

Year of Publication: 2015

Publication issue: 28(9-10)

Page numbers: 1073-1077

SHORTLINK: bit.ly/22P57Cp

Title: Radiofrequency ablation on veno-arterial extracorporeal life support in treatment of very sick infants with incessant tachymyopathy

Author(s): Shebani, S. O., Ng, G. A., Stafford, P. & Duke, C.

Affiliation: East Midlands Congenital Cardiac Centre, Glenfield Hospital, UK; ²⁻³ Department of Cardiology, Glenfield Hospital, Leicester, UK; East Midlands Congenital Cardiac Centre, Glenfield Hospital, Leicester, UK and Department of Paediatric Cardiology, King Abdulaziz Medical City, Jeddah, Saudi Arabia.

Abstract:

AIMS:

To evaluate the use of extracorporeal membrane oxygenation (ECMO) in supporting infants who require radiofrequency ablation (RFA) for incessant tachyarrhythmias, with particular emphasis on modifications required to standard ablation techniques.

METHODS AND RESULTS:

Three cases of RFA carried out in infancy on ECMO support were reviewed retrospectively. Two infants with permanent junctional reciprocating tachycardia (PJRT) and one with ventricular tachycardia (VT) presented in a low cardiac output state, owing to cardiomyopathy caused by incessant tachycardia. In each case antiarrhythmic drug therapy caused haemodynamic collapse, requiring emergency ECMO support. Drug therapy on ECMO was not successful. In one patient, the tachycardia was controlled on ECMO with antiarrhythmic drugs, but recurred following ECMO decannulation. Each patient had a successful RFA on ECMO support. Power delivery was low during ablation lesions. In the PJRT cases power as low as 3-5 Watts was effective. In the VT ablation, an irrigated tip RFA catheter was required when cooling remained poor even after temporarily stopping ECMO flow.

CONCLUSION:

Extracorporeal membrane oxygenation provides a haemodynamically stable and safe platform for antiarrhythmic drug therapy and RFA in infants with incessant tachyarrhythmias. Once ECMO has been commenced, if the tachyarrhythmia remains difficult to control with antiarrhythmic drugs, RFA should be strongly considered, to avoid the risk of tachycardia recurrence following ECMO decannulation. Power delivery during ablation lesions may be low because of inadequate cooling of the catheter tip. Reducing or stopping flow in the ECMO circuit may not provide adequate cooling and an irrigated tip catheter may be required.

Journal: Europace

Year of Publication: 2015

Publication issue: 17(4)

Page numbers: 622-627

SHORTLINK: bit.ly/1UeTS46

Title: Sleep-disordered breathing in children with chronic kidney disease

Author(s): Amin, R., Sharma, N., Al-Mokali, K., Sayal, P., Al-Saleh, S., et al.

Affiliation: ^{1-2,4} Hospital for Sick Children, Toronto, Canada; Department of Paediatrics, University of Toronto, Toronto, Canada; Department of Paediatric Nephrology, King Abdulaziz Medical City, Riyadh, Saudi Arabia; et al.

Abstract:

BACKGROUND:

The aim of our study was to ascertain the prevalence and type of sleep-disordered breathing (SDB) in paediatric patients with severe chronic kidney disease (CKD) based on the results of polysomnograms (PSGs).

METHODS:

Overnight PSGs were conducted on children with CKD stages 3-5 (dialysis dependent). Data were collected on patient demographics from the medical records. Study participants and/or their caregivers completed the paediatric modification of the Epworth Sleepiness Scale Score, the Pediatric Sleep Questionnaire (PSQ) and the Pediatric Quality of Life Inventory at the time of the PSG.

RESULTS:

Nineteen children were included in the study, of whom seven were on dialysis. The median (interquartile range) age at the time of the PSG was 13.5 (5.4-16.5) years, and eight (42%) of the children were male. There was a 37% (n=7) prevalence of SDB in this cohort based on the PSG results. Central sleep apnea and obstructive sleep apnea were found in three children each. The PSQ scores did not correlate with the obstructive apnea-hypopnea index.

CONCLUSIONS:

There was a high prevalence of SDB in this cohort of children with CKD. The PSG and validated sleep questionnaires yielded discordant results, reinforcing the limitations of diagnosing SDB in the CKD population based solely on sleep questionnaires.

Journal: Pediatric Nephrology

Year of Publication: 2015

Publication issue: 30(12)

Page numbers: 2135-2143

SHORTLINK: bit.ly/25M1Hce

Title: Towards an ICF core set for ADHD: a worldwide expert survey on ability and disability

Author(s): de Schipper, E., Mahdi, S., Coghill, D., de Vries, P. J. ... Almodayfer, O., et al.

Affiliation: Karolinska Institutet, Stockholm, Sweden; Stockholm County Council, Stockholm, Sweden; University of Dundee, Dundee, UK; University of Cape Town, South Africa, King Abdulaziz Medical City, College of Medicine, Riyadh, Saudi Arabia; et al.

Abstract:

This is the second in a series of four empirical studies designed to develop International Classification of Functioning, Disability and Health (ICF and Children and Youth version, ICF-CY) core sets for attention deficit hyperactivity disorder (ADHD). The objective of this stage was to gather the opinions from international experts on which ability and disability concepts were considered relevant to functioning in ADHD. An email-based survey was carried out amongst international experts in ADHD. Relevant functional ability and disability concepts were extracted from their responses and linked to the ICF/-CY categories by two independent researchers using a standardised linking procedure. 174 experts from 11 different disciplines and 45 different countries completed the survey. Meaningful concepts identified in their responses were linked to 185 ICF/-CY categories. Of these, 83 categories were identified by at least 5 % of the experts and considered the most relevant to ADHD: 30 of these were related to Body functions (most identified: attention functions, 85 %), 30 to Activities and Participation (most identified: school education, 52 %), 20 to Environmental factors (most identified: support from immediate family, 61 %), and 3 to Body structures (most identified: structure of brain, 83 %). Experts also provided their views on particular abilities related to ADHD, naming characteristics such as high-energy levels, flexibility and resiliency. Gender differences in the expression of ADHD identified by experts pertained mainly to females showing more internalising (e.g. anxiety, low self-esteem) and less externalising behaviours (e.g. hyperactivity), leading to a risk of late- and under-diagnosis in females. Results indicate that the impact of ADHD extends beyond the core symptom domains, into all areas of life and across the lifespan. The current study in combination with three additional preparatory studies (comprehensive scoping review, focus groups, clinical study) will provide the scientific basis to define the ADHD ICF/-CY core sets for multi-purpose use in basic and applied research and every day clinical practice.

Journal: European Child & Adolescent Psychiatry

Year of Publication: 2015

Publication issue: 24(12)

Page numbers: 1509-1521

SHORTLINK: bit.ly/1WEFS5M

Title: Treatment of biotin-responsive basal ganglia disease: Open comparative study between the combination of biotin plus thiamine versus thiamine alone

Author(s): Tabarki, B., Alfadhel, M., AlShahwan, S., Hundallah, K., AlShafi, S. et al.

Affiliation: Department of Pediatrics, Prince Sultan Military Medical City, Riyadh, Saudi Arabia; Department of Pediatrics, King Abdulaziz Medical City, Riyadh, Saudi Arabia; ³⁻⁵ Divisions of Pediatric Neurology, Department of Pediatrics, Prince Sultan Military Medical City, Riyadh, Saudi Arabia; et al.

Abstract:

OBJECTIVE:

To compare the combination of biotin plus thiamine to thiamine alone in treating patients with biotin-responsive basal ganglia disease in an open-label prospective, comparative study.

METHODS:

twenty patients with genetically proven biotin-responsive basal ganglia disease were enrolled, and received for at least 30 months a combination of biotin plus thiamine or thiamine alone. The outcome measures included duration of the crisis, number of recurrence/admissions, the last neurological examination, the severity of dystonia using the Burke-Fahn-Marsden Dystonia Rating Scale (BFMDRS), and the brain MRI findings during the crisis and after 30 months of follow-up.

RESULTS:

Ten children with a mean age of 6 years (1/2) were recruited in the biotin plus thiamine group (group 1) and ten children (6 females and 4 males) with a mean age of 6 years and 2 months were recruited in the thiamine group (group 2). After 2 years of follow-up treatment, 6 of 20 children achieved complete remission, 10 had minimal sequelae in the form of mild dystonia and dysarthria (improvement of the BFMDRS, mean: 80%), and 4 had severe neurologic sequelae. All these 4 patients had delayed diagnosis and management. Regarding outcome measures, both groups have a similar outcome regarding the number of recurrences, the neurologic sequelae (mean BFMDRS score between the groups, $p = 0.84$), and the brain MRI findings. The only difference was the duration of the acute crisis: group 1 had faster recovery (2 days), versus 3 days in group 2 ($p = 0.005$).

CONCLUSION:

Our study suggests that over 30 months of treatment, the combination of biotin plus thiamine is not superior to thiamine alone in the treatment of biotin-responsive basal ganglia disease.

Journal: European Journal of Paediatric Neurology

Year of Publication: 2015

Publication issue: 19(5)

Page numbers: 547-552

SHORTLINK: bit.ly/1U7iLNE

Title: Vitamin D status in Saudi school children based on knowledge

Author(s): Al-Saleh, Y., Al-Daghri, N. M., Khan, N., Alfawaz, H., Al-Othman, A. M. et al.

Affiliation: King Abdulaziz Medical City, College of Medicine; College of Science, King Saud University; College of Science, King Saud University; College of Food Science and Agriculture, King Saud University; College of Applied Medical Sciences, King Saud University, Riyadh, Saudi Arabia; et al.

Abstract:

Background

The prevalence of vitamin D deficiency in the Saudi Arabia is rising unexpectedly in every age group. Apart from several risk factors, the lack of awareness is posing a serious threat for low vitamin D levels in children as well. The aim of our study was to compare the knowledge and status of vitamin D in Saudi school children.

Methods

Saudi students, 1188 boys (15.1 ± 2.2 years) and 1038 girls (15.1 ± 2.0 years), were recruited and a pre-designed questionnaire with regards to knowledge about vitamin D was administered. Blood samples were collected and serum 25hydroxyvitamin D (25(OH)D) was measured.

Results

A significantly higher percentage of boys answered correctly than girls regarding knowledge questions as sun exposure ($p = 0.002$, and 0.011), breastfeeding ($p < 0.001$) and diseases ($p < 0.001$). The percentage of girls was significantly higher who thought that fruits and vegetables are not rich sources of vitamin D (24.7% girls vs. 15.4% boys; $p < 0.001$ and 29.6% girls vs. 20.9% boys $p < 0.001$), respectively. Boys had a higher prevalence and frequency of sun exposure than girls ($p < 0.001$ for both). Girls showed a significantly higher percentage of sunscreen use and full covering during sun exposure ($p = 0.001$ for both). Vitamin D deficiency was significantly higher in girls than boys (47.0% versus 19.4.0%; $p < 0.001$). Vitamin D status in boys was significantly higher than girls ($p < 0.001$). In girls, those who answered correctly about vitamin D related disease ($p = 0.03$) and sources ($p = 0.015$), demonstrated significantly higher vitamin D levels.

Journal: BMC Pediatrics

Year of Publication: 2015

Publication issue: 15

Page numbers:

SHORTLINK: bit.ly/28k6MDL

Title: Dissecting the Heterogeneity of Macrophage Activation Syndrome Complicating Systemic Juvenile Idiopathic Arthritis

Author(s): Minoia, F., Davi, S., Horne, A., Bovis, F., Demirkaya, E., et al.

Affiliation: Istituto Giannina Gaslini, Genoa, Italy; Karolinska University Hospital Solna, Stockholm, Sweden; Gulhane Military Medical Faculty, Ankara, Turkey; Royal Children's Hospital, Melbourne, Australia; Bakirkoy Maternity and Children Education and Research Hospital, Istanbul, Turkey; King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia; King Fahad National Guard Hospital, Riyadh, Saudi Arabia; et al.

Abstract:

OBJECTIVE:

To seek insights into the heterogeneity of macrophage activation syndrome (MAS) complicating systemic juvenile idiopathic arthritis (sJIA) through the analysis of a large patient sample collected in a multinational survey.

METHODS:

International pediatric rheumatologists and hemato-oncologists entered their patient data, collected retrospectively, in a Web-based database. The demographic, clinical, laboratory, histopathologic, therapeutic, and outcome data were analyzed in relation to (1) geographic location of caring hospital, (2) subspecialty of attending physician, (3) demonstration of hemophagocytosis, and (4) severity of clinical course.

RESULTS:

A total of 362 patients were included by 95 investigators from 33 countries. Demographic, clinical, laboratory, and histopathologic features were comparable among patients seen in diverse geographic areas or by different pediatric specialists. Patients seen in North America were given biologics more frequently. Patients entered by pediatric hemato-oncologists were treated more commonly with biologics and etoposide, whereas patients seen by pediatric rheumatologists more frequently received cyclosporine. Patients with demonstration of hemophagocytosis had shorter duration of sJIA at MAS onset, higher prevalence of hepatosplenomegaly, lower levels of platelets and fibrinogen, and were more frequently administered cyclosporine, intravenous immunoglobulin (IVIG), and etoposide. Patients with severe course were older, had longer duration of sJIA at MAS onset, had more full-blown clinical picture, and were more commonly given cyclosporine, IVIG, and etoposide.

CONCLUSION:

The clinical spectrum of MAS is comparable across patients seen in different geographic settings or by diverse pediatric subspecialists. There was a disparity in the therapeutic choices among physicians that underscores the need to establish uniform therapeutic protocols.

Journal: Journal of Rheumatology

Year of Publication: 2015

Publication issue: 42(6)

Page numbers: 994-1001

SHORTLINK: bit.ly/1Y8OSiw

Title: Implantation of spherical and toric copolymer phakic intraocular lens to manage amblyopia due to anisometropic hyperopia and myopia in pediatric patients

Author(s): Emara, K. E., Al Abdulsalam, O. & Al Habash, A.

Affiliation: Dhahran Eye Specialist Hospital, Dhahran, Saudi Arabia; Department of Ophthalmology, King Abdulaziz Hospital, Al Ahsa, Saudi Arabia; Department of Ophthalmology, University of Dammam, Dammam, Saudi Arabia.

Abstract:

PURPOSE:

To evaluate the safety and efficacy of implantation of the Visian Implantable Collamer Lens phakic intraocular lens (pIOL) (spherical and toric models) for management of amblyopia due to anisometropic hyperopia and myopia in children.

DESIGN:

Retrospective case series.

SETTING:

Tertiary care eye specialty hospital, Dhahran, Saudi Arabia.

METHODS:

Eyes of patients who underwent the implantation of the pIOL for refractory anisometropic amblyopia were identified. None of the patients were compliant with spectacle/contact lens correction. Preoperative and postoperative clinical evaluation included visual acuity, cycloplegic refraction, slitlamp microscopy, intraocular pressure, orthoptic evaluation, anterior chamber depth, and ICL vault.

RESULTS:

A total of 11 eyes (9 myopic, 2 hyperopic) of 11 patients aged 5 to 15 years were identified. Of the 9 myopic eyes, 6 eyes received spherical ICLs and 3 received toric ICLs. Both hyperopic eyes received spherical ICLs. Preoperatively, the mean cycloplegic refractive spherical equivalent (CRSE) was -11.07 D (range -7.75 to -21.88 D) in myopic eyes, and +8.75 D (range +8.63 to +8.87 D) in hyperopic eyes. The mean corrected distance visual acuity (CDVA) was 20/171 (range 20/40 to 20/400) in myopic eyes, and 20/130 (range 20/60 to 20/200) in hyperopic eyes. At a mean follow-up of 16.8 months (in myopic eyes), the mean CRSE was -1.40 D (range 0 to -2.25 D), and mean CDVA was 20/51 (range 20/20 to 20/100). In hyperopic eyes, at a mean follow-up of 15 months, the mean CRSE was +1.82 D (range +1.75 to +1.88 D) and the CDVA had improved to 20/25 in both eyes.

CONCLUSION:

ICL implantation may be considered a safe and effective treatment option for refractory amblyopia due to anisometropic hyperopia or myopia in children who are noncompliant with conventional therapy.

Journal: Journal of Cataract and Refractive Surgery

Year of Publication: 2015

Publication issue: 41(11)

Page numbers: 2458-2465

SHORTLINK: bit.ly/25M3M0M

Title: Optimal Management of a 2-Hour-Old Newborn With Severe Congenital Subglottic Stenosis and Multiple Congenital Heart Diseases

Author(s): Alshammari, J. & Alanazy S.

Affiliation: Department of Surgery-Pediatric Otorhinolaryngology, King Saud bin Abdulaziz University, National Guard, Riyadh, Saudi Arabia; Department of Surgery-Pediatric Otorhinolaryngology, King Saud bin Abdulaziz University, National Guard, Riyadh, Saudi Arabia.

Abstract:

INTRODUCTION:

Congenital subglottic stenosis (C-SGS) is the third most common congenital anomaly of the larynx. It necessitates tracheotomy in newborns if it causes severe airway obstruction. When the negative impact of tracheostomy cannot be tolerated, as in presence of congenital heart disease requiring further surgical intervention, other alternative procedures are required. This case report is the first of its kind reporting airway expansion in a neonate in the first few hours after birth.

CASE REPORT:

A 38-week-fetus male was born with multiple congenital heart anomalies and C-SGS of grade III. Single-stage laryngotracheoplasty (SS-LTP) with anterior thyroid alar cartilage (TAC) grafting was performed. Our team was fully aware of all potential risks during SS-LTP procedure in such debilitated patient.

DISCUSSION:

Treatment of C-SGS in premature neonates is tracheostomy to avoid prolonged intubation. In some cases, tracheostomy is not a good option as in presence of congenital heart disease necessitating urgent further surgical interventions. Among all surgical procedures to augment the airway without tracheostomy, SS-LTP with placement of anterior TAC graft was our choice.

CONCLUSION:

This case report demonstrated that SS-LTP with anterior TAC graft can be performed in a newborn with severe C-SGS and congenital heart disease. It can alleviate the need for tracheostomy and avoid unnecessary delay for subsequent cardiac interventions. However, further study is likely needed to make a definitive statement of its safety and efficacy.

Journal: 12): 1006-1010.

Year of Publication: 2015

Publication issue: 124(12)

Page numbers: 1006-1010

SHORTLINK: bit.ly/1PhhaR7

Title: Accelerating Novel Candidate Gene Discovery in Neurogenetic Disorders via Whole-Exome Sequencing of Prescreened Multiplex Consanguineous Families

Author(s): Alazami, A. M., Patel, N., Shamseldin, H. E., Anazi, S., Al-Dosari, M. S., ... Al Mutari, F., et al.

Affiliation: King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia; College of Pharmacy, King Saud University, Riyadh, Saudi Arabia; King Khalid University Hospital and College of Medicine, King Saud University, Riyadh, Saudi Arabia; Department of Pediatrics, King Fahad Medical City, Riyadh, Saudi Arabia; Division of Genetics, Department of Pediatrics, King Saud bin Abdulaziz University for Health Sciences, King Abdulaziz Medical City, Saudi Arabia; et al.

Abstract:

Our knowledge of disease genes in neurological disorders is incomplete. With the aim of closing this gap, we performed whole-exome sequencing on 143 multiplex consanguineous families in whom known disease genes had been excluded by autozygosity mapping and candidate gene analysis. This prescreening step led to the identification of 69 recessive genes not previously associated with disease, of which 33 are here described (SPDL1, TUBA3E, INO80, NID1, TSEN15, DMBX1, CLHC1, C12orf4, WDR93, ST7, MATN4, SEC24D, PCDHB4, PTPN23, TAF6, TBCK, FAM177A1, KIAA1109, MTSS1L, XIRP1, KCTD3, CHAF1B, ARV1, ISCA2, PTRH2, GEMIN4, MYOCD, PDPR, DPH1, NUP107, TMEM92, EPB41L4A, and FAM120AOS). We also encountered instances in which the phenotype departed significantly from the established clinical presentation of a known disease gene. Overall, a likely causal mutation was identified in >73% of our cases. This study contributes to the global effort toward a full compendium of disease genes affecting brain function.

Journal: Cell Reports

Year of Publication: 2015

Publication issue: 10(2)

Page numbers: 148-161

SHORTLINK: bit.ly/1Uou55r

Title: *Escherichia coli* necrotizing fasciitis in Hirschsprung's disease

Author(s): Alsaif, M. A. & Robinson, J. L.

Affiliation: Department of Pediatrics, King Abdulaziz Hospital, Al-Ahsa, Saudi Arabia; Department of Pediatrics, University of Alberta, Edmonton, Canada.

Abstract:

Necrotizing fasciitis is a rare post-operative complication of Hirschsprung's disease. Very recently the only previous case of necrotizing fasciitis following a Soave procedure was reported with the etiologic agent being *Pseudomonas aeruginosa*. Here we are reporting the second case of necrotizing fasciitis following a Soave procedure caused by an extended spectrum beta lactamase harboring strain of *Escherichia coli* which is a rare pathogen in type II necrotizing fasciitis.

Journal: Journal of Pediatric Surgery Case Reports

Year of Publication: 2015

Publication issue: 3(4)

Page numbers: 174-175

SHORTLINK: bit.ly/1tdUbsR

Title: Design and Evaluation of Orally Disintegrating Tramadol Hydrochloride Tablets by Direct Compression Method

Author(s): Wajid, S., Al-Arifi, M. N., Al Saleh, S. S., Babelgaith, S. D., Al Saleh, S., et al.

Affiliation: ^{1-2,4} Department of Clinical Pharmacy, College of Pharmacy, King Saud University, KSA; Ministry of Health, KSA; Imam Abdulrahman bin Faisal Hospital, Dammam-National Guard Health Affairs, Dammam, KSA; et al.

Abstract:

Aims: To design and evaluate an orally disintegrating tramadol hydrochloride tablets (ODT).

Methods: Tramadol hydrochloride orally disintegrating tablets were designed and manufactured by direct compression method, using Cross povidone, Precirol, EPO, Sorbitol, PEG 6000, Aerosol, HCL, magnesium stearate, xylitol, acesulfame potassium, as key excipients, and peppermint flavor and sweetener, respectively. These formulations were then evaluated using pharmacopoeial and non-pharmacopoeial physical and chemical tests. Dissolution and assay tests were performed using USP apparatus II and ultraviolet (UV) spectrophotometry, respectively.

Results: The tablet formulation prepared with crospovidone (F1) showed good flow properties, low disintegration time (13 s) and improved drug release (100% at 30 min) compared with those of the other formulations (84% at 30 min). All the formulations exhibited satisfactory physicochemical characteristics. The results indicated that suitable ODT of tramadol could be prepared.

Conclusion: A suitable preparation of tramadol HCl ODT which contains Crospovidone (superdisintegrant) and sorbitol (bulking agent) was found to be the best among Tramadol hydrochloride ODT formulations prepared by direct compression method, because it has exhibited good disintegration time and good dissolution profile when compared to other formulations.

Journal: British Journal of Pharmaceutical Research

Year of Publication: 2015

Publication issue: 8(4)

Page numbers:

SHORTLINK: bit.ly/1U7jnCW

Title: Design and in-vitro evaluation of controlled release tri-layer venlafaxine hydrochloride transdermal patch

Author(s): Afreen, S., Vamshi Vishnu, Y. Al Saleh, S. S., Wajid, S., Kumar, S., et al.

Affiliation: ^{1-2,5} Vikas College of Pharmacy, Telangana, India; Ministry of Health, Riyadh, Saudi Arabia; College of Pharmacy, King Saud University, Riyadh, Saudi Arabia; et al.

Abstract:

Objectives: The purpose of this study was to design a suitable transdermal therapeutic system for venlafaxine hydrochloride (VFH) with the objective to prolong the release to be used for controlled release drug delivery. **Methods:** Transdermal patches of VFH with a hydroxypropyl methylcellulose drug reservoir were prepared by the solvent evaporation technique. In this investigation, the Eudragit RSPO membrane in different concentrations was cast to achieve controlled release of the drug. The absence of physicochemical interactions between VFH and the polymers was confirmed by Fourier transform infrared spectroscopy. The physicochemical parameters and in-vitro drug release studies of formulations were performed and data of optimized formulation were fitted to various kinetic models. **Results:** The results indicated that suitable tri-layered transdermal patches of VFH with controlled drug release could be prepared. All the formulations exhibited satisfactory physicochemical characteristics. Among the formulations prepared, formulation F2 showed optimized controlled release for 24 hrs (96.42%) with the flux of 28.28 $\mu\text{g}/\text{cm}^2/\text{hr}$ and permeability coefficient of $1.1315 \times 10^{-3} \text{ cm}/\text{hr}$. Drug release from optimized patch followed Korsmeyer-Peppas model and was mediated by Fickian diffusion mechanism. **Conclusion:** Hence, the development of adhesive type tri-layered transdermal patches for VFH might be a promising one to control the drug release for 24 hrs with reduced side-effects.

Journal: Asian Journal of Pharmaceutical and Clinical Research

Year of Publication: 2015

Publication issue: 8(3)

Page numbers: 271-277

SHORTLINK: bit.ly/1VMbyol

Title: Profuse bleeding from traumatic lateral plantar artery pseudoaneurysm after glass foot injury diagnosed by CT angiography: A case report

Author(s): Crankson, S., Gieballa, M. & Al Kohlani, H.

Affiliation: Department of Surgery, King Abdulaziz Medical City, Riyadh; King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia; Department of Surgery, King Abdulaziz Medical City, Riyadh, Saudi Arabia.

Abstract:

Retained foreign bodies and penetrating injuries to the plantar aspect of the foot are a common child childhood problem. Inflammations or infections are common complications whereas vascular injury and pseudoaneurysm' formation are rare. Three cases of post -traumatic lateral plantar artery (LPA) pseudoaneurysms due to foot lacerations by glass have been reported in children. This case is a six year-old boy who presented with two episodes of bleeding after a foot laceration sustained when he stepped on glass. CT angiography showed an LPA pseudoaneurysm that was successfully managed by surgery. It should be recognized that penetrating injuries to the plantar aspect of the foot, may be associated with vascular injury and pseudoaneurysm' formation. Appropriate investigations and management is important to prevent further complications.

Journal: Journal of Pediatric Surgery Case Reports

Year of Publication: 2015

Publication issue: 3(1)

Page numbers: 1-3

SHORTLINK: bit.ly/25M41ca

Title: Factors that predict hydrocephalus following intraventricular hemorrhage

Author(s): AlShardan, M. M., Mubasher, M., Orz, Y. & AlYamany, M.

Affiliation: King Fahad Medical City, King Saud Bin Abdulaziz University for Health Sciences, Faculty of Medicine, Department of Neurosurgery, Riyadh, Saudi Arabia; [Jaeb Center for Health Research](#); [Alexandria University](#); King Saud bin Abdulaziz University for Health Sciences, Ar Riyā , Saudi Arabia.

Abstract:

OBJECTIVE:

To evaluate potential risk factors that can predict the development of hydrocephalus (HCP) in adult patients with intraventricular hemorrhage (IVH).

METHODS:

Retrospective analysis of all adult patients presented to King Fahad Medical City between 2004 and 2011 with intraventricular hemorrhage to evaluate different variables and their association with HCP.

RESULTS:

A total of 31 patients were included in the study, 14 patients (45.16%) developed HCP. Seventy-four percent of HCP patients (10 out of 14) had Graeb classification of ≥ 6 and/or had IVH affecting all ventricles, while 76% of the patients without HCP (13 out of 17) had a Graeb classification of < 6 and/or had IVH only in the lateral ventricles (8 out of 17) or lateral ventricles and either third or fourth ventricle (5 out of 17). Statistical analysis showed that HCP is significantly associated with both Graeb classification of 6 or greater number of IVH affecting all ventricles and 3 versus 1-2 affected ventricles; (OR (95% CI, p value), respectively, 19.3(2, >20), p value<0.05; 8.5 (1.6, >30), p value<0.05.

CONCLUSION:

HCP following IVH is present in approximately half of all IVH cases. In the present retrospective study, it was found that patients with higher grades of IVH and/or a greater number of affected ventricles had a greater risk of developing HCP.

Journal: British Journal of Neurosurgery

Year of Publication: 2015

Publication issue: 29(2)

Page numbers: 225-228

SHORTLINK: bit.ly/1XE5fW5

Title: Hemi-Hypoglossal Nerve Transfer for Obstetric Brachial Plexus Palsy: Report of 3 Cases

Author(s): Al-Thunyan, A., Al-Qattan, M. M., Al-Meshal, O., Al-Husainan, H. & Al-Assaf, A.

Affiliation: ^{1,3-5} Division of Plastic Surgery, National Guard Hospital, Riyadh, Saudi Arabia; Division of Plastic Surgery, King Saud University, Riyadh, Saudi Arabia.

Abstract:

Use of the entire hypoglossal nerve for nerve transfer in obstetric palsy is not recommended because of major donor nerve morbidity in terms of feeding and speech problems. We used a hemi-hypoglossal nerve transfer for biceps reinnervation in obstetric palsy in 3 infants with multiple root avulsions. Two of the 3 infants recovered normal or near-normal elbow flexion. There was no donor nerve morbidity in terms of feeding. Speech was assessed at age 20 to 27 months and was appropriate for age, which indicates that early speech development (speech intelligibility and articulation) were not affected. However, phonological development (expected to develop by age 3 y) and full consonant development (expected to be complete by age 5 y) could not be assessed because all children were younger than age 3 years at final follow-up. Our results confirm the relative safety of using a hemi-hypoglossal nerve transfer in infants. The transfer deserves study in a larger series and with longer follow-up, particularly regarding speech development.

Journal: Journal of Hand Surgery-American Volume

Year of Publication: 2015

Publication issue: 40(3)

Page numbers: 448-451

SHORTLINK: bit.ly/1t8GV1g

Title: Neuroendocrine tumor of the appendix inside an incarcerated Amyand's hernia

Author(s): Elbanna, K. Y., Alzahrani, H. A., Azzumeea, F. & Akzamel, H. A.

Affiliation: ^{1,3} Medical Imaging Department, King Fahad National Guard Hospital, King Abdulaziz Medical City, Riyadh, Saudi Arabia; Faculty of Medicine, King Khalid University, Saudi Arabia; Department of Surgery, King Fahad National Guard Hospital, King Abdulaziz Medical City, Riyadh, Saudi Arabia.

Abstract:

Amyand's hernia is a rare type of hernia where the vermiform appendix is within an inguinal hernia sac. Tumors of the appendix are quite uncommon. The coincidence of an Amyand's hernia with neuroendocrine tumor of the appendix, as in our case, is even more rarely reported.

We report the case of an 81-year-old male who presented with an incarcerated right inguinal hernia. After resuscitation, the clinical diagnosis was confirmed by computed tomography. It showed an incarcerated right inguinal hernia which contained the distal ileum, cecum, thickened appendix, as well as a small amount of fluid. Subsequently, the patient was prepared for emergency surgery. During the operation, the hernia sac was found and opened. The appendix was swollen. Therefore, appendectomy was performed. The inguinal defect was repaired using the Modified Bassini Technique. The patient had an uneventful postoperative recovery and surprisingly the histopathology of the appendix revealed a 1.5 cm well-differentiated low grade neuroendocrine tumor (carcinoid) of the appendix tip. An incidental finding of neuroendocrine tumor of the appendix in a patient with s hernia is extremely rare. A high index of suspicion is the key to diagnose such a coincidence in order to safely and optimally treat such a condition.

Journal: International Journal of Surgery Case Reports

Year of Publication: 2015

Publication issue: 14

Page numbers: 152-155

SHORTLINK: bit.ly/1t8Hatd

Title: Surgical Reconstruction of Peripheral Pulmonary Arteries: Strategies, Outcomes, and New Classification

Author(s): Al-Khalidi, A. & Tamimi, O.

Affiliation: Division of Cardiac Surgery, King Abdulaziz Medical City, and King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Division of Pediatric Cardiology, King Abdulaziz Medical City, and King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

BACKGROUND:

Pulmonary artery stenosis (PAS) is classified as central (types 1 and 2) and peripheral (type 3 affects proximal part of lobar arteries, type 4 affects proximal part of segmental arteries, and type 5 affects distal part of segmental arteries). In this study, we examine the outcomes of surgical reconstruction of peripheral PAS.

METHODS:

We reviewed 31 patients with peripheral PAS who underwent surgical repair. Median age was 30 months. Patients with intact ventricular septum (24 patients) presented with severe right ventricular dilation and dysfunction and mean right ventricular to left ventricular pressure (RVSP/LVSP) ratio was 0.96 ± 0.25 , 1.14 ± 0.23 , and 1.43 ± 0.07 for types 3, 4, and 5, respectively ($p = 0.03$). Pulmonary artery reconstruction was achieved in single stage in 19 patients (61%).

RESULTS:

Six patients (19%) had type 3, 22 patients (71%) had type 4, and 3 patients (10%) had type 5. mean number of angioplasties per patient was 18 ± 8 . There was no early mortality. Mean postoperative RVSP/LVSP ratio decreased to 0.27 ± 0.08 , 0.36 ± 0.05 , and 0.96 ± 0.06 , for types 3, 4, and 5, respectively ($p < 0.001$). The median follow-up was 48 months. Patients with type 3 and 4 showed marked improvement in functional status after surgery. Patients with type 5 showed clinical evidence of improved cardiac output despite modest decrease in RVSP. No surgical re-intervention was needed, while balloon dilation was performed in 1 patient with type 5 lesions.

CONCLUSIONS:

Surgical reconstruction of diffuse peripheral PAS is feasible and associated with excellent hemodynamic and functional outcomes in patients where there is no involvement of the distal part of segmental arteries.

Journal: Annals of Thoracic Surgery

Year of Publication: 2015

Publication issue: 100(2)

Page numbers: 623-630

SHORTLINK: bit.ly/1PhiovN

Title: Mazabraud's syndrome: Report of its first incidence in the Middle East and a literature review

Author(s): Alhujayri, A. K., AlShomer, F., Algathani, M. & Alshanawani, B.

Affiliation: ^{1,3} King Abdulaziz Medical City, Riyadh, Saudi Arabia; ^{2,5} King Saud University/College of Medicine, King Khalid University Hospital, Saudi Arabia; Security Forces Hospital, Riyadh, Saudi Arabia.

Abstract:

INTRODUCTION:

Mazabraud's syndrome, a rare benign disease with indolent course, is best described as an association between soft tissue myxoma and fibrous dysplasia of the bones. In this report, we describe the first case of this syndrome from Saudi Arabia.

CASE PRESENTATION:

A 24-year-old male in overall good health status, presented with progressive left knee swelling over 6 years with no other associated symptoms. The swelling measured 5 cm in diameter, with smooth surface, and soft palpable texture. Radiological examination followed by histopathological examination of the excised mass confirmed our diagnosis of Mazabraud's syndrome. The patient was closely followed up with systematic examination with no recurrence.

DISCUSSION:

Fibrous dysplasia, soft tissue myxoma and multiple endocrinological diseases like McCune-Albright syndrome characterize Mazabraud's syndrome. Furthermore, fibrous dysplasia is found to be associated with GNA15 gene mutation. Many patients can have asymptomatic course of the disease but may present with pathological fractures, pain, and limitation of movement when the myxoma is near the joints or just simple cosmetically disturbing swelling like in our case.

CONCLUSION:

Patients with such presentation need to be investigated thoroughly to rule out associated diseases and to evaluate the extent of such pathology. The improvement of radiological modalities can help in narrowing the differential diagnosis and following the patient to early detect the recurrence or any malignant transformation of the condition.

Journal: Annals of Medicine and Surgery

Year of Publication: 2015

Publication issue: 4(4)

Page numbers: 361-365

SHORTLINK: [bit.ly/ 22P7KEe](http://bit.ly/22P7KEe)

Title: Bilateral superior vena cava with right superior vena cava draining into left atrium

Author(s): Alghamdi, M. H., Elfaki, W., Al-Habshan, F. & Aljarallah, A. S.

Affiliation: ^{1,3-4} King Fahad Cardiac Centre, King Saud University, Riyadh, Saudi Arabia; King Abdulaziz Medical City, Riyadh, Saudi Arabia; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Anomalies of systemic venous return are extremely heterogeneous congenital malformations with variable ranges from completely normal physiology to severe forms of right to left shunting requiring surgical treatment. Anomalous drainage of a right-sided superior vena cava (SVC) to the left atrium (LA) is one of the rarest variants of systemic venous return anomalies, characterized by right-to-left shunt physiology and cyanosis. Here we report a 2 years old girl presented with cyanosis which was observed shortly after birth by her parents but not further investigated. She is otherwise active girl and with normal growth and development. Her clinical examination was unremarkable apart from mild clubbing of the fingers and low oxygen saturation of 88–90% in room air. Her ECG and chest X-ray were unremarkable. Echocardiography showed bilateral SVC connected by a small innominate vein. The right SVC drains directly into the LA while the left SVC drains into the right atrium (RA) via a dilated coronary sinus. There is a small superior sinus venosus type atrial septum defect (ASD) with left to right shunt. Also, there is partial anomalous pulmonary venous return with right upper and right middle pulmonary veins draining directly into the right SVC, which is connected to LA. The right lower pulmonary vein and left pulmonary veins drain directly to LA. The rest of her echocardiography demonstrated normal heart structures and function. This patient was referred for surgical correction, including baffling of the right SVC to the RA and closure of the ASD. We describe this case to highlight the importance of recognizing this rare anomalous systemic venous connection as one of the very rare causes of cyanosis in the pediatric age group as well as at older age.

Journal: Journal of the Saudi Heart Association

Year of Publication: 2015

Publication issue: 27(2)

Page numbers: 123-126

SHORTLINK: bit.ly/24z9Yqs

Title: Horner's syndrome after paediatric cardiac surgery: case report and review of the literature

Author(s): Nasser, B. A., Mesned, A., Moazamy, Y. E. & Kabbani, M. S.

Affiliation: ¹⁻³ Pediatric Cardiac Intensive Care, Prince Sultan Cardiac Center, Buridh, Qassim, Saudi Arabia; Pediatric Cardiac Intensive Care, King Abdul Aziz Medical City, King Saud Bin AbdulAziz University, Riyadh, Saudi Arabia.

Abstract:

Iatrogenic Horner's syndrome is a rare complication that can occur after trauma, cervical central line insertion, chest tube insertion, and rarely following adult thoracic and neck surgery, especially in high risk patients with hypertension and diabetes. The majority of cases reported in the literature describe non-iatrogenic Horner's syndrome in adults as an unusual presentation for cervical tumours or apical lung carcinoma. In children, there are some reports describing acquired Horner's syndrome following trauma or invasive intervention near the cervical-thoracic area. Less has been written about the incidence of Horner's syndrome following paediatric cardiac surgery.

Journal: Cardiology in the Young

Year of Publication: 2015

Publication issue: 25(3)

Page numbers: 569-572

SHORTLINK: bit.ly/1RX2BIE

Title: Neurointerventional participation in craniopagus separation

Author(s): Alokaili, R. N., Ahmed, M. E., Al Feryan, A., Goodrich, J. T. & Aloraidi, A.

Affiliation: ¹⁻⁵ King Abdulaziz Medical City, National Guard, Riyadh, Saudi Arabia.

Abstract:

Craniopagus-type conjoined twins (joined at the head) are exceedingly rare. Separation of craniopagus conjoined twins is a challenging task mainly owing to complex vascular anatomy and limited experience with this disorder. Modern neuroimaging techniques including digital subtraction angiography can be used to preoperatively assess the cerebral vascular system. These techniques can also provide the raw data to fabricate three-dimensional true-scale models. We report a case in which endovascular techniques have been used in the separation of craniopagus conjoined twins. To our knowledge there are no reports of successful incorporation of neurointerventional methods in the disconnection of shared venous channels.

Journal: Interventional Neuroradiology

Year of Publication: 2015

Publication issue: 21(4)

Page numbers: 552-557

SHORTLINK: bit.ly/1U7kltz

Title: Survey of h-index for neurosurgeons in Saudi Arabia

Author(s): Jamjoom, A. B.

Affiliation: Neurosurgery Section, Department of Surgery, King Khalid National Guard Hospital, Jeddah, Saudi Arabia.

Abstract:

OBJECTIVE:

To calculate the h-index for neurosurgeons in the Saudi Arabia (KSA), and to assess its association with a number of features relating to neurosurgical practice in KSA.

METHODS:

The h-index for 84 neurosurgeons that worked in KSA during 1990-2013 was evaluated using Google Scholar during the period September to October 2014. The correlation between the h-index and a number of neurosurgeon and neurosurgical center characteristics was determined and examined statistically.

RESULTS:

The median h-index was 2.5 (range 0-33) and the mean was 5.04. The h-index was significantly higher for neurosurgeons who obtained their certification before 2001 and those working at the King Faisal Specialist Hospital, Riyadh, KSA. The h-index was also higher, but without reaching significance, for non-Saudi neurosurgeons, those with international certification and those working at the university hospitals. Additionally, the h-index was significantly lower for neurosurgeons working in the Ministry of Health hospitals.

CONCLUSION:

Application of the h-index to KSA neurosurgeons revealed a significant correlation with the duration after certification and with certain centers. Evaluation of the h-index should be included in the consideration for academic positions in KSA. Saudi neurosurgeons should be encouraged to publish in journals with high impact factor.

Journal: Neurosciences

Year of Publication: 2015

Publication issue: 20(4)

Page numbers: 392-395

SHORTLINK: bit.ly/1Yem0pG

Title: Periprosthetic osteolysis after AES total ankle replacement: conventional radiography versus CT-scan

Author(s): Viste, A., Al Zahrani, N., Brito, N., Lienhart, C., Fessy, M. H., et al.

Affiliation: Service de Chirurgie Orthopédique et Traumatologique, France; King Abdulaziz Medical City, Department of Surgery, Riyadh, Saudi Arabia; Matosinhos, Portugal; ⁴⁻⁵ Service de Chirurgie Orthopédique et Traumatologique, France; Hospices Civils de Lyon, et al.

Abstract:

BACKGROUND:

The aim of this study was to compare conventional X-rays and CT-scan in detecting peri-prosthetic osteolytic lesions, a major concern after total ankle replacement (TAR).

METHODS:

We prospectively assessed 50 patients (mean age 56 years), consecutively operated on by the same senior surgeon, between 2003 and 2006 and with a mean follow-up period of 4 years (range, 2-6.2). The component used was AES total ankle replacement. The etiologies for total ankle arthroplasty were: posttraumatic in 50%, osteoarthritis secondary to instability in 36%. Plain radiographs were analyzed by 4 independent observers, using a 10-zone protocol (location) and 5 size categories.

RESULTS:

At 4-year follow-up, all patients had been CT-scan assessed with the same protocol by 2 independent observers. Plain radiographs showed dramatic progression of severe periprosthetic lyses (>10mm): from 14% to 36% of interface cysts for the tibial component respectively at 2 and 4-year follow-up and from 4% to 30% for the talar implant. The talar component was more accurately assessed by CT-scan (mean frontal and sagittal talar lesion: from 270 mm² to 288 mm² for CT-scan versus 133 mm² to 174 mm² for X-rays). For tibial cysts, axial views showed larger lesions (313 mm² than frontal (194 mm²) or sagittal (213.5 mm²) views. At 4-year follow-up, 24% of patients had revision with curetage or arthrodesis, and at 7 years follow-up 38% were revised.

CONCLUSION:

These results are similar to recent AES series, justifying withdrawal of this device. CT-scan was more accurate than X-rays for detecting and quantifying periprosthetic osteolysis. We recommend a yearly radiological control and CT-scan in case of lesion on X-rays.

Journal: Foot Ankle Surgery

Year of Publication: 2015

Publication issue: 21(3)

Page numbers: 164-170

SHORTLINK: bit.ly/25M5IXh

Title: Hemorrhagic presentations of cerebellar pilocytic astrocytomas in children resulting in death: report of 2 cases

Author(s): Wilson, M. P., Johnson, E. S., Hawkins, C., Atkins, K., Alshaya, W., et al.

Affiliation: Departments of Radiology and Diagnostic Imaging; Laboratory Medicine and Pathology; Division of Pathology and Labatt Brain Tumor Research Centre, Hospital for Sick Children, University of Toronto, Canada; King Abdulaziz Medical City, Ministry of National Guard-Health Affairs, Riyadh, Saudi Arabia.

Abstract:

Acute hemorrhagic presentation in pilocytic astrocytomas (PAs) has become increasingly recognized. This type of presentation poses a clinically emergent situation in those hemorrhages arising in PAs of the cerebellum, the most frequent site, because of the limited capacity of the posterior fossa to compensate for mass effect, predisposing to rapid neurological deterioration. As examples, we describe two cases of fatal hemorrhagic cerebellar PAs: one of a child with a slowly growing stereotypical WHO Grade I PA with a 1-year period of symptomatology that preceded a rapid clinical deterioration, and another of an asymptomatic child having a PA variant, presenting with progressive obtundation following a presumed Valsalva event. These two scenarios parallel previous reports in the literature of either a setting of progressive expression of cerebellar dysfunction and transient episodes of raised intracranial pressure (ICP), or abrupt onset of features of increased ICP in a previously well child. The literature is further reviewed for a current understanding of the factors that predispose, initiate and propagate bleeding, with specific reference to the role of vascular endothelial growth factor and other angiogenic agents in the genesis and stability of the vasculature in PAs. In this context, we propose that obliterative vascular mural hyalinization with associated altered flow dynamics and microaneurysm formation was the pathogenesis of the hemorrhage in our first case. In the second case, large tumor size, increased growth rate, looseness of the background myxoid matrix, and thinness of the tumor blood vessels with calcospherite deposition predisposed to vascular leakage and bleeding concurrent with sudden increases in intravascular hydrostatic pressure. In that cerebellar PAs are common, this report underscores the importance of considering in the differential diagnosis the possibility of a spontaneous hemorrhage in a posterior fossa PA in a child presenting with a sudden neurological ictus and raised ICP.

Journal: Journal of Neurosurgery - Pediatrics.

Year of publication: 2015

Volume: Epub 2015

Page numbers: -

SHORTLINK: bit.ly/22P8Gs2

Title: Implantation of spherical and toric copolymer phakic intraocular lens to manage amblyopia due to anisometropic hyperopia and myopia in pediatric patients

Author(s): Emara, K. E., Al Abdulsalam, O. & Al Habash, A.

Affiliation: Pediatric Ophthalmology Division, Dhahran Eye Specialist Hospital, Dhahran, Saudi Arabia; Department of Ophthalmology, King Abdulaziz Hospital, Al Ahsa, National Guard Health Affairs, Saudi Arabia.

Abstract:

PURPOSE: To evaluate the safety and efficacy of implantation of the Visian Implantable Collamer Lens phakic intraocular lens (pIOL) (spherical and toric models) for management of amblyopia due to anisometropic hyperopia and myopia in children.

DESIGN: Retrospective case series.

SETTING: Tertiary care eye specialty hospital, Dhahran, Saudi Arabia.

METHODS: Eyes of patients who underwent the implantation of the pIOL for refractory anisometropic amblyopia were identified. None of the patients were compliant with spectacle/contact lens correction. Preoperative and postoperative clinical evaluation included visual acuity, cycloplegic refraction, slitlamp microscopy, intraocular pressure, orthoptic evaluation, anterior chamber depth, and ICL vault.

RESULTS: A total of 11 eyes (9 myopic, 2 hyperopic) of 11 patients aged 5 to 15 years were identified. Of the 9 myopic eyes, 6 eyes received spherical ICLs and 3 received toric ICLs. Both hyperopic eyes received spherical ICLs. Preoperatively, the mean cycloplegic refractive spherical equivalent (CRSE) was -11.07 D (range -7.75 to -21.88 D) in myopic eyes, and +8.75 D (range +8.63 to +8.87 D) in hyperopic eyes. The mean corrected distance visual acuity (CDVA) was 20/171 (range 20/40 to 20/400) in myopic eyes, and 20/130 (range 20/60 to 20/200) in hyperopic eyes. At a mean follow-up of 16.8 months (in myopic eyes), the mean CRSE was -1.40 D (range 0 to -2.25 D), and mean CDVA was 20/51 (range 20/20 to 20/100). In hyperopic eyes, at a mean follow-up of 15 months, the mean CRSE was +1.82 D (range +1.75 to +1.88 D) and the CDVA had improved to 20/25 in both eyes. Although complications occurred in the 2 hyperopic eyes, the complications were either temporary or visually insignificant and did not necessitate reoperation or ICL explantation.

CONCLUSION: ICL implantation may be considered a safe and effective treatment option for refractory amblyopia due to anisometropic hyperopia or myopia in children who are noncompliant with conventional therapy.

Journal: Journal of Cataract Refractive Surgery

Year of Publication: 2015

Publication issue: 41(11)

Page numbers: 2458-2465

SHORTLINK: bit.ly/25M3M0M

Title: Altababa medical volunteer group mission to Almanagil hospital, Sudan: new ideas for long-term partnership, success factors and guidelines for other groups

Author(s): Ahmed, G. Y., Hassan, I., Jafar, S., Alawad, M., Jameel, A., et al.

Affiliation: ^{1-3,5} King Abdulaziz Medical City, Riyadh, Saudi Arabia; King Fahad Medical City, Riyadh, Saudi Arabia; et al.

Abstract:

Sudanese medical volunteers have a long history of working in districts with poor health-care infrastructure. Altababa medical volunteer group (AMVG) was established by Sudanese physicians working in Saudi Arabia who desired to contribute to improving clinical services and training in their country of origin. This paper documents steps in the planning and evaluation of AMVG's first mission to Almanagil hospital in Sudan in 2013. Over a 3-day period the visiting team of 4 physicians performed 25 laparoscopic surgical and obstetric/gynaecological procedures and 36 echocardiogram tests—all with hands-on training—presented 11 lectures and consulted with 137 patients. A total of 247 trainees and patients completed a 22-item evaluation survey. The first mission was highly rated by both trainees (health-care providers) and patients. The results provided a road map for volunteers to accomplish cost-effective goals in small hospitals with modest facilities.

Journal: Eastern Mediterranean Health Journal

Year of Publication: 2015

Publication issue: 21(6)

Page numbers: 440-447

SHORTLINK: bit.ly/1Y8T6qw



King Saud bin Abdulaziz University for Health Sciences

Title: Determination of the serum levels of troponin I and creatinine among Sudanese type 2 diabetes mellitus patients

Author(s): Karar, T., Elfaki, E. M. & Qureshi, S.

Affiliation: ^{1,3} College of Applied Medical Sciences, King Saud Bin Abdul-Aziz University for Health Sciences, Riyadh, Saudi Arabia; College of Medical Laboratory Sciences, Sudan University of Science and Technology, Khartoum, Sudan.

Abstract:

BACKGROUND: Diabetes mellitus (DM) is a significant risk factor for developing cardiac diseases. Hence, we compare the serum levels of cardiac troponin I (CTnI) among type 2 diabetic and healthy patients. We additionally correlated CTnI and creatinine levels with duration of disease.

MATERIALS AND METHODS: A cross-sectional study was conducted at Department of Clinical Chemistry, Sudan University of Sciences and Technology, Khartoum, Sudan, from February 2008 to February 2011. 200 patients diagnosed with DM type 2 from Jabir Abulizz Diabetes Centre in Khartoum state, Sudan, and 100 healthy volunteers were included in this study. Blood samples were collected from both groups, and the serum levels of CTnI, creatinine, fasting plasma glucose and glycosylated hemoglobin (HbA1c) levels were measured.

RESULTS: Significant increase in serum levels of CTnI, glucose, HbA1c, and creatinine was observed in diabetic patients compared to healthy controls. In addition, the significant increase in CTnI and creatinine levels was observed among diabetic patients with ischemic heart disease or hypertension when compared with those without ischemic heart disease or hypertension. Further a strong positive correlation was observed between the duration of diabetes and the serum levels of CTnI and creatinine ($r = 0.84$, $P > 0.01$) and ($r = 0.72$, $P > 0.01$), respectively.

CONCLUSION: The higher levels of CTnI and creatinine may be indicative of progressive cardiovascular disease and nephropathy among diabetic patients.

Journal: Journal of Natural Science, Biology and Medicine

Year of Publication: 2015

Publication issue: 6

Page numbers: S80-S84

SHORTLINK: bit.ly/1tedrjd

Title: Intubations and airway management: An overview of Hassles through third millennium

Author(s): Alanazi, A.

Affiliation: Department of Pediatric Emergency, College of Applied Medical Sciences, King Saud Bin Abdul-Aziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Background: The placement of a tube into a patient's trachea "the intubation" as we call is not as simple as it looks. It is a very tricky and tedious maneuver that entails skills to assess and perform. Nevertheless, often this is left to the chores of inefficient hands due to a paucity of the availability of experts. They seldom are able to complete the task and often wind up calling the attention of the unit. The present review is an attempt to describe the need to undertake intubation, the procedures and techniques, the complications, including morbidity and mortality and airway management. This overview includes explicit descriptions of the difficult airway which represents multifaceted interface amid patient factors, clinical setting, and skills of the practitioner.

Materials and Methods: To accomplish the target, peer-reviewed English language articles published during third millennium up to 2013 were selected from Pub Med, Pub Med Central, Science Direct, Up-to-date, Med Line, comprehensive databases, Cochrane library, and the Internet (Google, Yahoo).

Review of Literature: The review constituted a systematic search of literature on the requirements that necessitate the practice of intubation, different techniques that facilitate easy conduct of procedure, the complications, including, morbidity and mortality, and the airway management.

Journal: Journal of Emergencies, Trauma and Shock

Year of Publication: 2015

Publication issue: 8(2)

Page numbers: 99-107

SHORTLINK: bit.ly/25Ju97w

Title: Shear bond strength between alumina substrate and prosthodontic resin composites with various adhesive resin systems

Author(s): AlJehani, Y. A., Baskaradoss, J. K., Geevarghese, A., AlShehry, M. A. & Vallitu, P. K.

Affiliation: King Saud University, Riyadh, Saudi Arabia; Case Western Reserve University, Cleveland, USA; King Saud Bin Abdulaziz University for Health Sciences, ¹⁻³ King Abdulaziz Medical City, Riyadh, Saudi Arabia; University of Turku and City of Turku, Welfare Division, Turku, Finland.

Abstract:

BACKGROUND: With the increase in demand for cosmetics and esthetics, resin composite restorations and all-ceramic restorations have become an important treatment alternative. Taking into consideration the large number of prosthodontic and adhesive resins currently available, the strength and durability of these materials needs to be evaluated. This laboratory study presents the shear bond strengths of a range of veneering resin composites bonded to all-ceramic core material using different adhesive resins.

METHODS: Alumina ceramic specimens (Techceram Ltd, Shipley, UK) were assigned to three groups. Three types of commercially available prosthodontic resin composites [BelleGlass[®], (BG, Kerr, CA, USA), Sinfony[®] (SF, 3 M ESPE, Dental Products, Germany), and GC Gradia[®] (GCG, GC Corp, Tokyo, Japan)] were bonded to the alumina substrate using four different adhesive resins. Half the specimens per group (N = 40) were stored dry for 24 hours, the remaining were stored for 30 days in water. The bonding strength, so-called shear bond strengths between composite resin and alumina substrate were measured. Data were analysed statistically and variations in bond strength within each group were additionally evaluated by calculating the Weibull modulus.

RESULTS: Bond strengths were influenced by the brand of prosthodontic resin composites. Shear bond strengths of material combinations varied from 24.17 ± 3.72 - 10.15 ± 3.69 MPa and 21.20 ± 4.64 - 7.50 ± 4.22 at 24 h and 30 days, respectively. BG resin composite compared with the other resin composites provided the strongest bond with alumina substrate ($p < 0.01$). SF resin composite was found to have a lower bond strength than the other composites. The Weibull moduli were highest for BG, which was bonded by using Optibond Solo Plus adhesive resin at 24 h and 30 days. There was no effect of storage time and adhesive brand on bond strength.

CONCLUSION: Within the limitations of this study, the shear bond strengths of composite resins to alumina substrate are related to the composite resins.

Journal: BMC Oral Health

Year of Publication: 2015

Publication issue: 15

Page numbers:

SHORTLINK: bit.ly/25JusPO

Title: Assessment of circulating biochemical markers and antioxidative status in acute lymphoblastic leukemia (ALL) and acute myeloid leukemia (AML) patients

Author(s): Rasool, M., Farooq, S., Malik, A., Shaukat, A. ... Iqbal, Z. et al.

Affiliation: Center of Excellence in Genomic Medicine Research, King Abdulaziz University, Jeddah, Saudi Arabia; ²⁻⁴ Institute of Molecular Biology and Biotechnology, University of Lahore, Lahore, Pakistan; College of Applied Medical Sciences, King Saud Bin Abdulaziz University of Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Various circulating biochemical markers are indicators of pathological state in leukemia and its subtypes. Increased oxidative stress and decreased antioxidant factors portray clear image associated with malignancies during subtypes of leukemia. In this research work we investigated the inter-relationship among the subtypes of leukemia with circulating biochemical markers and oxidative stress in the Pakistani population. This research work was conducted on a total number of 70 subjects in which 20 were control participants and 50 were suffering from leukemia and divided into two subtypes (ALL and AML). Various circulating biomarkers were investigated including hematological, hepatic and renal profiles as well as oxidative stress markers, electrolytes and vitamins C and E. Results show that vitamin E was found to be decreased in diseased sub-types ($P < 0.05$). Malondialdehyde (MDA) levels were very high in disease sub-types (ALL-B = 8.69 ± 1.59 ; ALLT = 8.78 ± 0.97 ; AML = 8.50 ± 1.29) compared to controls (1.22 ± 0.10 ; $P < 0.05$) while the levels of antioxidants [superoxide dismutase (SOD), glutathione peroxidase (GPx), reduced glutathione (GSH), catalase (CAT)], platelets, as well as electrolytes (Ca and Mg) were reduced in patients suffering from leukemia (sub-types). Enhanced levels of oxidative stress (MDA) and decreased levels of enzymatic and non-enzymatic antioxidants reflect the pathological state and impaired cell control in patients suffering from leukemia (subtypes) and show a strong correlation with oxidative stress, indicating that patients' biological systems are under oxidative stress.

Journal: Saudi Journal of Biological Sciences

Year of Publication: 2015

Publication issue: 22(1)

Page numbers: 106-111

SHORTLINK: bit.ly/1Uwkr60

Title: Effects of passive smoking on students at College of Applied Medical Sciences, King Saud Bin Abdulaziz University for Health Sciences, Riyadh

Author(s): Alanazi, A., Al Enezi, F., Alqahtani, M., Ansari, M. A., Al-Oraibi, S., et al.

Affiliation: ^{1,5} College of Applied Medical Sciences, King Saud Bin Abdul-Aziz University for Health Sciences, Riyadh, Saudi Arabia; ²⁻⁴ College of Applied Medical Sciences, King Saud Bin Abdul-Aziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

smoking (PS) is associated with morbidity and mortality from awful diseases. Although many college students smoke, little is known about their exposure to PS, common places and sources of exposures in Saudi Arabia. **Aim:** The aim of the following study is to identify prevalence and magnitude of PS among college students, exposure time, locations, sources of exposure, investigate the effects and make recommendations.

Materials and Methods: A cross-sectional study was performed to identify factors associated with PS exposure among students of College of Applied Medical Sciences, Riyadh.

Results: Out of 61 students included in the study, 91.8% were found exposed to PS. Exposure in Hospitality venues (Estirah) was the most common followed by other areas. Among the sources of exposure, the highest was among friends and the least were parents and guests. The frequency of highest exposure per month was >15 times and the lowest was 10-15 times. Levels of annoyance varied between 18% and 37.7%, respectively. Since the values obtained for different markers in the pulmonary function test are more than the predicted values, the observed spirometry is normal. The percent oxygen saturation in hemoglobin and blood pressure of PS were in normal range.

Conclusion: Since the properties of mainstream smoke and environmental tobacco smoke are quite different, risk extrapolation from active to PS is uncertain, especially during a short period. Nevertheless, it can be deteriorating during a longer duration, hence; the administrators, policy makers and tobacco control advocates may endorse policies to restrict smoking in shared areas, particularly working environment.

Journal: Journal of Natural Science, Biology and Medicine

Year of Publication: 2015

Publication issue: 6(1)

Page numbers: 100-105

SHORTLINK: bit.ly/1UnvRDS

Title: 18 β -Glycyrrhetic acid exerts protective effects against cyclophosphamide-induced hepatotoxicity: potential role of PPAR γ and Nrf2 upregulation

Author(s): Mahmoud, A. M. & Al Dera, H. S.

Affiliation: Faculty of Science, Beni-Suef University, Beni Suef, Egypt; Basic Medical Sciences Department, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

18 β -Glycyrrhetic acid (18 β -GA) has been proposed as a promising hepatoprotective agent. The current study aimed to investigate the protective action and the possible mechanisms of 18 β -GA against cyclophosphamide (CP)-induced liver injury in rats, focusing on the role of peroxisome proliferator-activated receptor gamma (PPAR γ) and NF-E2-related factor-2 (Nrf2). Rats were administered 18 β -GA at doses 25 and 50 mg/kg 2 weeks prior to CP injection. Five days after CP administration, animals were sacrificed and samples were collected. CP induced hepatic damage evidenced by the histopathological changes and significant increase in serum pro-inflammatory cytokines, liver marker enzymes, and liver lipid peroxidation and nitric oxide (NO) levels. 18 β -GA counteracted CP-induced oxidative stress and inflammation as assessed by restoration of the antioxidant defenses and diminishing of pro-inflammatory cytokines, lipid peroxidation, and NO production. These hepatoprotective effects appear to depend on activation of Nrf2 and PPAR γ , and subsequent suppression of nuclear factor-kappa B. In conclusion, the present study provides evidence that 18 β -GA exerts hepatoprotective effects against CP through induction of antioxidant defenses and suppression of inflammatory response. This report also confers new information that 18 β -GA protects liver against the toxic effect of chemotherapeutic alkylating agents via activation of Nrf2 and PPAR γ .

Journal: Genes and Nutrition

Year of Publication: 2015

Publication issue: 10(6)

Page numbers:

SHORTLINK: bit.ly/1TXm653

Title: Coenzyme Q10 protects against acute consequences of experimental myocardial infarction in rats International

Author(s): Eleawa, S. M., Alkhateeb, M., Ghosh, S., Al-Hashem, F., Shatoor, A. S., Alhejaily, A. et al.

Affiliation: College of Health Sciences, PAAET, Kuwait; College of Medicine, King Khalid University, Saudi Arabia; IK Barber School of Arts and Sciences, Canada; College of Medicine, King Khalid University, Saudi Arabia; Faculty of Medicine, King Saud bin Abdul Aziz University for Health Sciences, et al.

Abstract:

Aim: Myocardial infarction (MI) due to sudden occlusion of a major coronary artery leads to a complex series of events that result in left ventricle (LV) impairment eventual heart failure. Therapeutic options are limited to reverse such trends post MI. The aim of this study was to compare the acute cardioprotective effects of the antioxidants, resveratrol (RES) and coenzyme Q10 (CoQ10), either individually or in combination, on infarct size, LV hemodynamics, inflammation and oxidative stress markers in rats with experimentally induced MI. **Methods:** Male Wistar rats were randomly divided into six groups: control without surgery, sham without occlusion, MI without antioxidants, RES pre-treated then MI (20 mg/kg, orally), CoQ10 then MI (20 mg/kg, intramuscular.), and combined RES and CoQ10 then MI with (each group n = 10). Pretreatment commenced 7 days prior to the permanent occlusion of the left anterior descending (LAD) coronary artery. Infarct area, hemodynamics, inflammation and oxidative stress markers were assessed 24 hours post-MI. **Results:** Compared to RES alone, CoQ10 pre-administration either by itself or in combination with RES, significantly reduced LV infarct area (57%), and normalized LV hemodynamic parameters like LVEDP (100%), LVSP (95.4%), LV +dp/dt and -dp/dt (102 and 73.1%, respectively). CoQ10 also decreased serum levels of brain natriuretic peptide (70%), and various circulating inflammatory markers like TNF- α (83.2%) and IL-6 (83.2%). Regarding oxidative stress, TBARS scores were lowered with a concurrent increase in both superoxide dismutase and glutathione peroxidase activities with CoQ10 alone or in combination with RES. **Conclusion:** Coenzyme Q10 protects against the acute sequelae of myocardial infarction. It profoundly reduced infarct area, inflammation and oxidative stress while normalizing LV hemodynamics post MI.

Journal: Journal of Physiology, Pathophysiology and Pharmacology

Year of Publication: 2015

Publication issue: 7(1)

Page numbers: 1-13

SHORTLINK: bit.ly/1t4Qtkf

Title: lambda-Carrageenan Suppresses Tomato Chlorotic Dwarf Viroid (TCDVd) Replication and Symptom Expression in Tomatoes

Author(s): Sangha, J. S., Kandasamy, S., Khan, W., Bahia, N. S., Singh, R. P. et al.

Affiliation: ^{1-2,4} Faculty of Agriculture, Dalhousie University, Canada; Basic Sciences Department, King Saud Bin Abdul Aziz University for Health Sciences, Riyadh, Saudi Arabia; Agriculture and Agri-Food Canada, Canada; et al.

Abstract:

The effect of carrageenans on tomato chlorotic dwarf viroid (TCDVd) replication and symptom expression was studied. Three-week-old tomato plants were spray-treated with iota(ι), lambda(λ), and kappa(κ)-carrageenan at 1 g·L⁻¹ and inoculated with TCDVd after 48 h. The λ -carrageenan significantly suppressed viroid symptom expression after eight weeks of inoculation, only 28% plants showed distinctive bunchy-top symptoms as compared to the 82% in the control group. Viroid concentration was reduced in the infected shoot cuttings incubated in λ -carrageenan amended growth medium. Proteome analysis revealed that 16 tomato proteins were differentially expressed in the λ -carrageenan treated plants. Jasmonic acid related genes, allene oxide synthase (AOS) and lipoxygenase (LOX), were up-regulated in λ -carrageenan treatment during viroid infection. Taken together, our results suggest that λ -carrageenan induced tomato defense against TCDVd, which was partly jasmonic acid (JA) dependent, and that it could be explored in plant protection against viroid infection.

Journal: Marine Drugs

Year of Publication: 2015

Publication issue: 13(5)

Page numbers: 2875-2889

SHORTLINK: bit.ly/1t4QTKf

Title: Modulation of motor unit activity in biceps brachii by neuromuscular electrical stimulation applied to the contralateral arm

Author(s): Amiridis, I. G., Mani, D., Almklass, A., Matkowski, B., Gould, J. R. & Enoka, R. M.

Affiliation: Department of Physical Education and Sport Sciences; Aristotle University of Thessaloniki, Greece; Department of Integrative Physiology, University of Colorado, Colorado; Department of Integrative Physiology, University of Colorado, Colorado; Department of Basic Medical Sciences, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

The purpose of the study was to determine the influence of neuromuscular electrical stimulation (NMES) current intensity and pulse width applied to the right elbow flexors on the discharge characteristics of motor units in the left biceps brachii. Three NMES current intensities were applied for 5 s with either narrow (0.2 ms) or wide (1 ms) stimulus pulses: one at 80% of motor threshold and two that evoked contractions at either 10% or 20% of maximal voluntary contraction (MVC) force. The discharge times of 28 low-threshold (0.4-21.6% MVC force) and 16 high-threshold (31.7-56.3% MVC force) motor units in the short head of biceps brachii were determined before, during, and after NMES. NMES elicited two main effects: one involved transient deflections in the left-arm force at the onset and offset of NMES and the other consisted of nonuniform modulation of motor unit activity. The force deflections, which were influenced by NMES current intensity and pulse width, were observed only when low-threshold motor units were tracked. NMES did not significantly influence the discharge characteristics of tracked single-threshold motor units. However, a qualitative analysis indicated that there was an increase in the number of unique waveforms detected during and after NMES. The findings indicate that activity of motor units in the left elbow flexors can be modulated by NMES current and pulse width applied to right elbow flexors, but the effects are not distributed uniformly to the involved motor units.

Journal: Journal of Applied Physiology

Year of Publication: 2015

Publication issue: 118(12)

Page numbers: 1544-1552

SHORTLINK: bit.ly/24vQB1

Title: Protective Effect of Resveratrol Against Aluminium Chloride (ALCL₃) Induced Testicular Damage in Rats Entails Inhibition of Intrinsic Apoptotic Pathway Need internet access

Author(s): Al Dera, H. & Abushouk A.

Affiliation: Department of Basic Medical Sciences, College of Medicine, King Saud bin Abdulaziz University for Health Science, Riyadh, Saudi Arabia.

Abstract:

This study was performed to investigate the protective and therapeutic effects of resveratrol (RES) against Aluminium chloride (ALCl₃-induced toxicity in rat testes. Six experimental groups of adult male rats were formulated as follows: (A) controls + NS, (B) control + vehicle (saline solution of hydroxypropyl cyclodextrin), (C) RES treated, (D) CdCl₂ + NS, (E) CdCl₂ + vehicle and (F) ALCl₃ + RES treated. At the end of the protocol, serum levels of FSH, LH and testosterone were measured in all groups, and testicular levels of TBARS Glutathione peroxidase (GPx) and superoxide dismutase (SOD) activity were measured. Epididymal semen analysis was performed, and testicular expression of, p53 and Bax was assessed by RT-PCR. Also, the histopathological changes of the testes were examined microscopically. Administration of RES concomitantly with ALCl₃ in rats improved semen parameters including count, motility, daily sperm production and morphology, increased serum concentrations of gonadotropins and testosterone, decreased testicular lipid peroxidation and increased SOD and GPx activities. RES not only attenuated ALCl₃-induced testicular histopathology but was also able to protect against the onset of cadmium chloride testicular toxicity. ALCl₃ upregulated the expression of pro-apoptotic genes p53 and Bax. Resveratrol completely reversed ALCl₃ testicular toxicity via down regulation of p53 and Bax gene expression. The data of the current study clearly demonstrates antiapoptotic and antioxidant protective effects of RSE against ALCl₃ induced testicular damage.

Journal: Science of Advanced Materials

Year of Publication: 2015

Publication issue: 7(2)

Page numbers: 384-395

SHORTLINK: bit.ly/1TXIbl8

Title: Review: Diverse pharmaceutical properties of *Cinnamomum cassia*: A review

Author(s): Zaidi, S. F., Aziz, M., Muhammad, J. S. & Kadowaki, M.

Affiliation: Institute of Natural Medicine, University of Toyama, Japan / King Saud bin Abdulaziz University of Health Sciences, Jeddah, Saudi Arabia; Faculty of Health Sciences, Aga Khan University, Karachi, Pakistan; ³⁻⁴ University of Toyama, Japan.

Abstract:

Cinnamomum cassia is widely utilized as a spice in different cookeries worldwide, especially in Asian cuisines. This herb is also being used in different forms of traditional medicine (Unani, Ayurvedic, Japanese and Chinese) for managing conditions like dyspepsia, peptic ulcer disease and ischemic brain injury. Recent studies have shown the scientific evidence for the medicinal use of this particular herb in several diseases like *H. pylori* infection, diabetes, brain ischemia and cancers. This article reviews the literature on potential benefits of the herb published within the last 10 years. The authors used Medical Subject Headings (MeSH) terms "*Cinnamomum*" with "cassia" or "aromaticum" to filter the PubMed database. To date, no systemic review focusing on medicinal use of *C. cassia* was found in the literature. Various research articles elucidating diverse pharmacological properties of *C. cassia* were identified. The standardised extract of *C. cassia* or the active compounds extracted from the herb might prove to be a novel candidate for early prevention and complimentary management of conditions like diabetes mellitus or *H. pylori*-associated disorders.

Journal: Pakistan Journal of Pharmacology

Year of Publication: 2015

Publication issue: 28(4)

Page numbers: 1433-1438

SHORTLINK: bit.ly/25K7ITa

Title: Spinal cord injury increases the reactivity of rat tail artery to angiotensin II

Author(s): Al Dera, H. & Brock, J. A.

Affiliation: Department of Anatomy and Neuroscience, University of Melbourne, Melbourne, VIC, Australia; Basic Medical Sciences, College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Studies in individuals with spinal cord injury (SCI) suggest the vasculature is hyperreactive to angiotensin II (Ang II). In the present study, the effects of SCI on the reactivity of the rat tail and mesenteric arteries to Ang II have been investigated. In addition, the effects of SCI on the facilitatory action of Ang II on nerve-evoked contractions of these vessels were determined. Isometric contractions of artery segments from T11 (tail artery) or T4 (mesenteric arteries) spinal cord-transected rats and sham-operated rats were compared 6–7 weeks postoperatively. In both tail and mesenteric arteries, SCI increased nerve-evoked contractions. In tail arteries, SCI also greatly increased Ang II-evoked contractions and the facilitatory effect of Ang II on nerve-evoked contractions. By contrast, SCI did not detectably change the responses of mesenteric arteries to Ang II. These findings provide the first direct evidence that SCI increases the reactivity of arterial vessels to Ang II. In addition, in tail artery, the findings indicate that Ang II may contribute to modifying their responses following SCI.

Journal: Frontiers in Neuroscience

Year of Publication: 2015

Publication issue: 8

Page numbers:

SHORTLINK: bit.ly/1RW7lbd

Title: Cervical vagotomy increased the distal colon distention to urinary bladder inhibitory reflex in male rats

Author(s): Kaddumi, E. G.

Affiliation: Department of Basic Medical Sciences, Faculty of Medicine, King Saud Bin Abdulaziz University for Health Sciences, National Guard Health Affairs, Jeddah, Saudi Arabia.

Abstract:

PURPOSE: Many studies have demonstrated the convergence of vagal inputs into brainstem centers with inputs from the urinary bladder and colon, as well as the convergence of vagal inputs into other centers controlling the urinary bladder and colon reflexes. However, the effect of the vagal inputs on the interaction between the urinary bladder and other pelvic organs has not been studied. In this study, the effect of bilateral cervical vagotomy on the distal colon to urinary bladder reflex was examined.

METHODS: Changes to cystometry parameters in response to increased distal colon distensions (1, 2, and 3 ml) were tested in urethane-anesthetized male rats with or without bilateral cervical vagotomy.

RESULTS: In animals with intact vagus nerves, 1 and 2 ml distal colon distentions had no significant effects on micturition frequency; however, 3 ml distal colon distention significantly decreased the frequency of micturition cycles. Also, 3 ml distal colon distention inhibited micturition cycles in 37.5 % of these animals. On the other hand, following cervical vagotomy, 1 ml distal colon distention was enough to significantly decrease the frequency of micturition cycles and to inhibit the cycles in 75 % of the animals.

CONCLUSION: These results demonstrate the presence of supraspinal inhibitory regulation, via the vagus nerve, over the distal colon to urinary bladder inhibitory reflex.

Journal: Clinical Autonomic Research:

Year of Publication: 2015

Publication issue: Epub 2015

Page numbers: -

SHORTLINK: bit.ly/1TTho2X

Title: Helicobacter pylori Induces Serine Phosphorylation of EGFR via Novel TAK1-p38 Activation Pathway in an HB-EGF-Independent Manner

Author(s): Zaidi, S. F., Refaat, A., Zhou, Y., Sualeh, M. J., Shin, M. S., et al.

Affiliation: University of Toyama, Toyama, Japan; King Saud bin Abdulaziz University of Health Sciences, Jeddah, Saudi Arabia; Aga Khan University, Karachi, Pakistan; University of Toyama, Toyama, Japan; Zewail City of Science and Technology, Giza, Egypt; et al.

Abstract:

BACKGROUND: The interaction of Helicobacter pylori with gastric epithelial cells can result in the activation of transcription factor NF- κ B via TGF- β -activated kinase 1 (TAK1). In this study, we have demonstrated the role of H. pylori in the activation of EGFR via TAK1-mediated phosphorylation of p38.

MATERIALS AND METHODS: Gastric epithelial AGS or MKN-45 cells were co-cultured with wild-type or cagA(-) H. pylori strains. H. pylori was added to the cells, and the activation of EGFR, p65 (NF- κ B) subunit, p38, ERK, and TAK1 was examined by Western blotting. Infected cells were pretreated with or without ligands, chemical inhibitors, anti-HB-EGF antibody, and siRNAs to evaluate the effects on phosphorylation of various EGFR residues. Fluorescence microscopy and flow cytometry were performed to detect the internalization of EGFR.

RESULTS: Incubating cells with wild-type and CagA(-) H. pylori strains resulted in the rapid and transient phosphorylation of serine residues of EGFR. RNAi experiments using siRNA against TAK1 and p38 pathways blocked the phosphorylation of serine residue. Immunofluorescence and flow cytometry revealed that EGFR was internalized in H. pylori-infected cells after EGFR phosphorylation in a p38-dependent manner. In contrast, pretreatment with gefitinib and anti-HB-EGF antibody did not block both the phosphorylation and internalization of EGFR.

CONCLUSION: Helicobacter pylori induce internalization of EGFR via novel TAK1-p38-serine activation pathway which is independent of HB-EGF. The interaction between TAK1 and EGFR in H. pylori-infected cells might open new dimensions in understanding H. pylori-associated gastric carcinogenesis.

Journal: Helicobacter

Year of Publication: 2015

Publication issue: 20(5)

Page numbers: 381-389

SHORTLINK: bit.ly/1UDp5MS

Title: Anti-inflammatory Effect of Cinnamaldehyde in Helicobacter pylori Induced Gastric Inflammation

Author(s): Muhammad, J. S., Zaidi, S. F., Shaharyar, S., Refaat, A., Usmanghani, K., et al.

Affiliation: Department of Gastroenterology and Hematology, University of Toyama; Department of Biological and Biomedical Sciences, Aga Khan University; Department of Basic Medical Sciences, King Saud bin Abdulaziz University of Health Sciences; Division of Pathogenic Biochemistry, University of Toyama; Department of Basic Clinical Sciences, Hamdard University; et al.

Abstract:

Cinnamomum cassia is widely employed for gastrointestinal complaints such as dyspepsia, flatulence, diarrhea, and vomiting. Studies report cinnamaldehyde (CM) as a major active constituent of cinnamon. The aim of this study was to evaluate the anti-inflammatory mechanism of CM on Helicobacter (H.) pylori-infected gastric epithelial cells in order to validate cinnamon traditional use in gastrointestinal (GI)-related disorders. AGS/MKN-45 cells and H. pylori (193C) were employed for co-culture experiments. Anti-H. pylori cytotoxic and anti-adhesion activity of CM were determined. Enzyme linked immunosorbent assay, real time polymerase chain reaction analysis and immunoblotting were used to measure the effect on interleukin-8 (IL-8) secretion/expression. The effect on activation of nuclear factor kappa B (NF- κ B) was determined by immunoblot analysis. The non-cytotoxic CM ($\leq 125 \mu\text{M}$) was also non-bactericidal at the given time, suggesting the effect in H. pylori/cell co-culture system was not due to alteration in H. pylori viability or the toxicity to the cells. Also, CM did not show any anti-adhesion effect against H. pylori/cell co-culture. However, pre-incubation of the cells with CM significantly inhibited the IL-8 secretion/expression from H. pylori-infected cells ($p < 0.01$). In addition, CM suppressed H. pylori-induced NF- κ B activation and prevented degradation of inhibitor (I)- κ B. This study provides evidence that the anti-inflammatory effect of C. cassia on H. pylori-infected gastric cells is due to blockage of the NF- κ B pathway by cinnamaldehyde. This agent can be considered as a potential candidate for in vivo and clinical studies against various H. pylori related gastric pathogenic processes.

Journal: Biological & Pharmaceutical Bulletin

Year of Publication: 2015

Publication issue: 38(1)

Page numbers: 109-115

SHORTLINK: bit.ly/1RW7iMu

Title: Estimation of sex from the anthropometric ear measurements of a Sudanese population

Author(s): Ahmed, A. A. & Omer, N.

Affiliation: Department of Basic Medical Sciences, King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia; Anatomy Department, University of Khartoum, Sudan.

Abstract:

The external ear and its prints have multifaceted roles in medico-legal practice, e.g., identification and facial reconstruction. Furthermore, its norms are essential in the diagnosis of congenital anomalies and the design of hearing aids. Body part dimensions vary in different ethnic groups, so the most accurate statistical estimations of biological attributes are developed using population-specific standards. Sudan lacks comprehensive data about ear norms; moreover, there is a universal rarity in assessing the possibility of sex estimation from ear dimensions using robust statistical techniques. Therefore, this study attempts to establish data for normal adult Sudanese Arabs, assessing the existence of asymmetry and developing a population-specific equation for sex estimation. The study sample comprised 200 healthy Sudanese Arab volunteers (100 males and 100 females) in the age range of 18-30years. The physiognomic ear length and width, lobule length and width, and conchal length and width measurements were obtained by direct anthropometry, using a digital sliding caliper. Moreover, indices and asymmetry were assessed. Data were analyzed using basic descriptive statistics and discriminant function analyses employing jackknife validations of classification results. All linear dimensions used were sexually dimorphic except lobular lengths. Some of the variables and indices show asymmetry. Ear dimensions showed cross-validated sex classification accuracy ranging between 60.5% and 72%. Hence, the ear measurements cannot be used as an effective tool in the estimation of sex. However, in the absence of other more reliable means, it still can be considered a supportive trait in sex estimation. Further, asymmetry should be considered in identification from the ear measurements.

Journal: Legal Medicine

Year of Publication: 2015

Publication issue: 17(5)

Page numbers: 313-319

SHORTLINK: bit.ly/1UDphvy

Title: Neonatal infections in Saudi Arabia: Association with cytokine gene polymorphisms

Author(s): Allam, G., Alsulaimani, A. A., Alzahrani, A. K. & Nasr, A.

Affiliation: College of Medicine, Taif University, Taif, Saudi Arabia; College of Medicine, Taif University, Taif, Saudi Arabia; Department of Neonatology, King Abdel Aziz Specialist Hospital, Taif, Saudi Arabia; Department of Basic Medical Sciences, King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia, Riyadh, Saudi Arabia.

Abstract:

In recent years, many studies have reported potential associations between cytokine gene polymorphisms and the development, course, and outcome of sepsis, often with apparently conflicting results. The objective of this study was to investigate single nucleotide polymorphism (SNP) in the interleukin (IL)-1 β -31 T/C, IL-6 -174 G/C, tumor necrosis factor α (TNF- α) -308 G/A, and interferon γ (IFN- γ) +874 A/T genes for their possible association with susceptibility to early onset sepsis (EOS) in Saudi newborn infants. A total of 205 newborn infants aged 1-2 days were consecutively enrolled onto the study having met the inclusion criteria (as per the research protocol). DNA was extracted from filter papers using the Chelex-100 method. The cytokines SNP were genotyping using Taqman 5' nuclease allelic discrimination. For cytokine measurements we used the commercially available Enzyme-Linked Immunosorbent Assay (ELISA) kit. Our results show that the circulating IL-1 β , IL-6, TNF- α , and IFN- γ were significantly ($p < 0.001$) elevated in EOS patients compared to suspected and sepsis-free control groups; and IL-1 β -31C, IL-6 -174G, TNF- α -308G, and IFN- γ +874A alleles were associated with EOS in Saudi infants. In conclusion, analysis of cytokines concentrations and SNP for the four tested genes can be used as a predictor of sepsis outcome in newborns.

Journal: Central European Journal of Immunology

Year of Publication: 2015

Publication issue: 40(1)

Page numbers: 68-77

SHORTLINK: bit.ly/24vToI2

Title: Array-Comparative Genomic Hybridization Analysis of a Cohort of Saudi Patients with Epilepsy

Author(s): Faheem, M., Naseer, M. I., Chaudhary, A. G., Kumosani, T. A., Rossol, M., et al.

Affiliation: Center of Excellence in Genomic Medicine Research, King Abdulaziz University, Jeddah, Saudi Arabia; et al.

Abstract:

Specific genetic anomalies or non-genetic factors could lead to epilepsy, but in various cases the underlying cause is unknown. Novel technologies, such as array comparative genomic hybridization, may reveal the copy number variants (CNVs), established as significant risk factor for epilepsy. This study carried out a high-density whole genome array- comparative genomic hybridization analysis with blood DNA samples from a cohort of twenty epilepsy patients to search for CNVs associated with epilepsy. Microdeletion of 14q31.1 was observed in four patients including two from the same family with loss of the NRXN3 gene; microdeletion of 15q12 in one patient with loss of the GABRG3 gene, and microduplication of 20q13.33 in three patients with loss of the gene group CHRNA4, KCNQ2, EEF1A2 and PPDPF were also found. These CNV findings were confirmed by real-time quantitative polymerase chain reaction. We have described, for the first time, numerous potential CNVs/genes implicated in epilepsy in the Saudi population. The study presents a better description of the genetic variations in epilepsy, and would eventually enable us to provide a foundation for understanding the critical genome regions which might be involved in the development of epilepsy.

Journal: CNS & Neurological Disorders-Drug Targets

Year of Publication: 2015

Publication issue: 14(4)

Page numbers: 468-475

SHORTLINK: bit.ly/1X8woiV

Title: Detection and genotyping of torque teno virus (TTV) in healthy blood donors and patients infected with HBV or HCV in Qatar

Author(s): Abuodeh, R., Al-Mawlawi, N., Al-Qahtani, A. A., Bohol, M. F., Al-Ahdal, M. N. et al.

Affiliation: College of Science and Health Professions, King Saud bin Abdulaziz University for Health Sciences, National Guard Health Affairs, Jeddah; Saudi Arabia; Hamad Medical Corporation, Doha, Qatar; ³⁻⁵ Research Center, King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia; et al.

Abstract:

Torque Teno virus (TTV) has been associated with non A-G hepatitis. The goal of this study was to estimate the infection rates and genotypic characteristics of TTV in the State of Qatar. A total of 644 blood samples representing different nationalities: (i) Qatari (118) and (ii) non-Qatari (526) nationals (mostly from Arab and South East Asia countries) were tested for the presence of TTV DNA by nested PCR. The majority (573) of the blood samples belonged to healthy blood donors, whereas 54 and 53 of the blood samples belonged to patients infected with hepatitis B virus (HBV) and hepatitis C virus (HCV), respectively. The results obtained showed that the TTV infection rates in the healthy blood donors, and those infected with HBV or HCV patients were 81.4, 90.75 and 84.9%, respectively. Significant association between TTV viremia and age, or nationality was observed. Sequence analysis of PCR fragments amplified from the 5'-untranslated region (5'-UTR) of all (531) TTV positive samples showed that 65.5% (348/531) of the PCR fragment sequences were classified into main genogroup 3, followed by main genogroups 5 (24%), 2 (5.8%), and 1 (4.7%). Genogroup 4 was not detected among the our studied subjects. Phylogenetic and pairwise analyses using sequences from TTV viremic samples also showed an overall close similarity to the main genogroup 3. In conclusion, there was no significant difference in the rates of TTV detection among Qataris and non-Qataris and several genotypes, mainly genotype 3, were isolated.

Journal: Journal of Medical Virology

Year of Publication: 2015

Publication issue: 87(7):

Page numbers: 1184-1191

SHORTLINK: bit.ly/1RW89wD

Title: Effects of serum indices interference on hormonal results from the Abbott Architect i2000 immunoassay analyser

Author(s): Hasanato, R., Brearton, S., Alshebani, M., Bailey, L., Alduqashim, S., et al

Affiliation: Department of Pathology and Laboratory Medicine, King Khalid University Hospital; Department of Pathology and Laboratory Medicine, King AbdulAziz Medical City; College of Medicine, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

The routine chemical assays are affected by sample haemolysis, icterus and lipaemia, collectively known as serum indices; however, little attention has been given to the consequences of these conditions on hormonal assays (immunoassays). In this study, we assess the impact of interferences from exogenous serum indices on various endocrine assays performed on the Abbott Architect i2000 system. The pool of 20 serum samples was derived from a hospitalised population. The diluted serum samples were spiked with red cell haemolysate, Intralipid and bilirubin. The interferences were studied at baseline; 12.5%, 25%, 50%, 75% and 100% of 5.0 g/L haemoglobin; 1% of 20% Intralipid; and 0.342 mmol/L of bilirubin according to the EP7-A2 guideline (Interference Testing in Clinical Chemistry; CLSI, USA). Aliquots were analysed in duplicate and/or triplicate for various hormones on the Abbott Architect i2000 immunoassay analyser. Serum ferritin ($r^2=0.84$; $P=0.074$) and TSH ($r^2=0.81$; $P=0.52$) levels showed a direct relationship with haemolysis and therefore overestimated because of the effects of haemolysis. The vitamin B12 level progressively decreased as the amount of haemolysis increased ($r^2=-0.76$; $P=0.136$). There was a significant decrease in progesterone concentration owing to lipaemia ($r^2=-0.983$; $P=0.003$). For icteric interferences, a strong inverse correlation was observed for folic acid and was shown to be statistically significant ($r^2=-0.94$; $P=0.017$). Assays for ferritin, TSH, vitamin B12, folic acid and progesterone showed various degrees of interference because of the variability in serum indices.

Journal: British Journal of Biomedical Science

Year of publication: 2015

Publication issue: 72(4)

Page numbers: 151-155

SHORTLINK: bit.ly/1Uwonya

Title: Behavioral effects of citrus limon in rats

Author(s): Khan, R. A. & Riaz, A.

Affiliation: Department of Pharmacology, Faculty of Pharmacy, University of Karachi, Karachi, Pakistan; Department of Basic Medical Sciences, King Saud bin Abdul-Aziz University for Health Sciences, Jeddah, Saudi Arabia.

Abstract:

Anxiety and depression are increasing worldwide, however these disorders may be managed by making healthier changes in dietary pattern, since there are evidences that diet rich in antioxidants and vitamins help reduce anxiety and depression. Hence present study was designed to evaluate the behavioral effects of Citrus limon in rats at three different doses i.e. 0.2, 0.4 and 0.6 ml/kg considered as low, moderate and high doses. Anxiolytic and antidepressant activities were specifically assessed twice during 15 days using open field test, elevated plus maze and forced swimming test. In open field test C. limon, revealed increase in distance travelled, number of central entries and number of rearing's at moderate dose, while in the elevated plus maze, number of open arm entries were found to be increased. Whereas in forced swimming test, there was decrease in duration of immobility and increase in duration of climbing. Thus results of present study suggest that C. limon at moderate dose have anxiolytic effect.

Journal: Metabolic Brain Disease

Year of Publication: 2015

Publication issue: 30(2)

Page numbers: 589-596

SHORTLINK: bit.ly/1UDqdzX

Title: The influence of external magnetic field on the structural and optical properties of nanocrystalline ZnO thin films prepared by dip coating method

Author(s): AlArfaj, E. & Subahi, A.

Affiliation: Physics Department, College of Science, Qassim University, Saudi Arabi; College of Science and Health Professions, King Saud Bin Abdulaziz University for Health Sciences, Jeddah, Saudi Arabia.

Abstract:

ZnO thin films were prepared by the sol gel dip coating method. Some samples were prepared under a DC magnetic field DC-MF (B); others were done without it. The sol gel was also continuously stirred. The field orientation in each case of deposition was chosen perpendicular as well as parallel to the growing ZnO-film substrate and the film depositions were carried out at a fixed B intensity value. The influences of magnetic field on the structural, morphological, and optical properties of ZnO thin films were investigated. In the perpendicular case, a cubic structure phase was observed at ambient conditions. It is noteworthy that this phase growth is only possible at high pressure deposition. In the parallel case, the films improved the crystal structure without creating a new phase. The structural properties of the ZnO films such as surface morphology and crystallinity were determined using scanning electron microscopy (SEM) and X-ray diffractometry (XRD), respectively. The optical properties of the ZnO films were characterized by the ultraviolet-visible (UV-Vis) spectroscopy.

Journal: Superlattices and Microstructures

Year of publication: 2015

Volume: 86

Page numbers: 508-517

SHORTLINK: bit.ly/1YcAqGM

Title: Mobile Intracardiac Mass after Inguinal Hernia Repair: An Unresolved Treatment Dilemma

Author(s): Almeahmadi, F., Davis, M. & Singh, S. M.

Affiliation: ¹⁻³ Schulich Heart Center, Sunnybrook Health Sciences Center, University of Toronto, Toronto, Canada; ¹ King Saud Bin Abdulaziz University of Health Sciences, Jeddah, Saudi Arabia.

Abstract:

Right heart thrombi (RHT) are rare but well-described entity in literature. Their isolation has been considered as confirmatory for the diagnosis of venous thromboembolism (VTE). Even though their isolation aids the diagnosis, physicians are faced with a difficult management dilemma giving the paucity of data to support any treatment decision. We present a case of RHT in an 81-year old man who presented to hospital with a large mobile right heart thrombus in transit seen on transthoracic echocardiogram (TTE). He was successfully treated with anticoagulation alone. This case highlights the importance of TTE in establishing the diagnosis and describes the interplay of factors influencing treatment decision.

Journal: Case Reports in Cardiology

Year of Publication: 2015

Publication issue: Epub 2015

Page numbers:

SHORTLINK: bit.ly/1TXmyAk

Title: Neopterin: An immune biomarker of coronary artery disease and its association with other CAD markers

Author(s): Firoz, C. K., Jabir, N. R., Kamal M. A., Alama, M.N., Damanhour, G.A., et al.

Affiliation: ^{1-3,5} King Fahd Medical Research Center, King Abdulaziz University, Jeddah, Saudi Arabia; Department of Cardiology, King Saud Bin Abdulaziz University for Health Sciences, Jeddah, Saudi Arabia; et al.

Abstract:

Neopterin has been considered as an important marker of cellular inflammation. The primary objective of the current study was to determine the role of neopterin in cardiovascular disease and its association with other well-known cardiac markers. The study was composed of total 200 subjects (100 confirmed coronary artery disease (CAD) patients, 50 recently diagnosed, and 50 managed CAD patients) both men and women and 100 healthy control individuals of matching age and weight. Serum neopterin analysis was done using commercial available ELISA kits. Other cardiac markers viz. troponin, creatine kinase (CK), CK MB isoenzyme (CKMB), lactate dehydrogenase (LDH), fibrinogen, C-reactive protein (CRP), alanine aminotransferase (ALT), and aspartate aminotransferase (AST) estimation was done by standard routine biochemical methods. Neopterin level was found to be remarkably enhanced by 150% and 513% in the recently diagnosed and managed CAD patients, respectively. CK level also showed a significant rise by 62% in the managed patients. However, recently diagnosed patients did not show any significant change. Moreover, cross correlation study showed statistically significant ($P < 0.01$) change in neopterin and CK levels between recently and managed patients. In the other studied CAD markers such as CKMB, fibrinogen and LDH also showed a significant increase in both categories of patients. CRP level was also found to be significantly enhanced by 357% ($P < 0.01$) and 341% ($P < 0.05$) in recently diagnosed and managed patients respectively. Because of cost effectiveness, easy and quick analysis of neopterin in the serum sample, we propose neopterin as the prognostic as well as diagnostic biomarker of CAD before other markers could be tested especially in Saudi population.

Journal: IUBMB Life

Year of Publication: 2015

Publication issue: 67(6)

Page numbers: 453-459

SHORTLINK: bit.ly/1UDqu5X

Title: Positional mapping of PRKD1, NRP1 and PRDM1 as novel candidate disease genes in truncus arteriosus

Author(s): Shaheen, R., Al Hashem, A., Alhgamdi, M. H., Seidahmad, M. Z., Al-Habshan, F. M., et al.

Affiliation: King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia; Prince Sultan Military Medical City, Riyadh, Saudi Arabia; Alfaisal University, Riyadh, Saudi Arabia; King Saud University, Riyadh, Saudi Arabia; Security Forces Hospital, Riyadh, Saudi Arabia; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

BACKGROUND: Truncus arteriosus (TA) is characterized by failure of septation of the outflow tract into aortic and pulmonary trunks and is associated with high morbidity and mortality. Although ranked among the least common congenital heart defects, TA provides an excellent model for the role of individual genes in cardiac morphogenesis as exemplified by TBX1 deficiency caused by point mutations or, more commonly, hemizygoty as part of the 22q11.2 deletion syndrome. The latter genetic lesion, however, is only observed in a proportion of patients with TA, which suggests the presence of additional disease genes.

OBJECTIVE: To identify novel genes that cause Mendelian forms of TA.

METHODS AND RESULTS: We exploited the occurrence of monogenic forms of TA in the Saudi population, which is characterized by high consanguinity, a feature conducive to the occurrence of Mendelian phenocopies of complex phenotypes as we and others have shown. Indeed, we demonstrate in two multiplex consanguineous families that we are able to map TA to regions of autozygoty in which whole-exome sequencing revealed homozygous truncating mutations in PRKD1 (encoding a kinase derepressor of MAF2) and NRP1 (encoding a coreceptor of vascular endothelial growth factor (VEGFA)). Previous work has demonstrated that Prkd1 (-/-) is embryonic lethal and that its tissue-specific deletion results in abnormal heart remodelling, whereas Nrp1(-/-) develops TA. Surprisingly, molecular karyotyping to exclude 22q11.2 deletion syndrome in the replication cohort of 17 simplex TA cases revealed a de novo hemizygous deletion that encompasses PRDM1, deficiency of which also results in TA phenotype in mouse.

CONCLUSIONS: Our results expand the repertoire of molecular lesions in chromatin remodelling and transcription factors that are implicated in the pathogenesis of congenital heart disease in humans and attest to the power of monogenic forms of congenital heart diseases as a complementary approach to dissect the genetics of these complex phenotypes.

Journal: Journal of Medical Genetics

Year of Publication: 2015

Publication issue: 52(5)

Page numbers: 322-329

SHORTLINK: bit.ly/1tehQCw

Title: Assessment of microalbuminuria and albumin creatinine ratio in patients with type 2 diabetes mellitus

Author(s): Karar, T., Alniwaider, R. A. R., Fattah, M. A., Al Tamimi, W., Alanazi, A. & Qureshi, S.

Affiliation: *College of Applied Medical Sciences, King Saud Bin Abdul-Aziz University, Riyadh, Saudi Arabia; National Guard Health Affairs, Riyadh, Saudi Arabia; Department of Emergency Medical Services, College of Applied Medical Sciences, King Saud Bin Abdul-Aziz University, Riyadh, Saudi Arabia; College of Applied Medical Sciences, King Saud Bin Abdul-Aziz University, Riyadh, Saudi Arabia.*

Abstract:

Aim: We aimed to evaluate the levels of urine microalbumin, urine albumin creatinine ratio, plasma creatinine and glycosylated hemoglobin (HbA1c) among type 2 diabetic patients and assessed the correlation between microalbuminuria and plasma creatinine levels.

Materials and Methods: A retrospective chart review study was conducted at Department of Clinical Chemistry, King Abdulaziz Medical City in Riyadh, Saudi Arabia, during August to December 2014. The study included 100 male and female patients diagnosed with type 2 diabetes mellitus (DM) and excluding patients with type 1 DM. Medical history and biochemical laboratory data were obtained from medical records and from biochemistry laboratory database.

Results: Increase in mean level of plasma creatinine (138 $\mu\text{mol/L}$), urine microalbuminuria (240 mg/L), albumin creatinine ratio (82) and HbA1c (8.7%) was observed among type 2 DM patients. Moderate positive correlation was observed between microalbuminuria and urine albumin creatinine ratio ($r = 0.509$ $P = 0.0006$) and between urine albumin creatinine ratio and plasma creatinine ($r = 0.553$ $P = 0.017$).

Conclusion: We concluded that type 2 DM patients who are at risk of developing renal impairment must be regularly monitored for microalbuminuria, urine albumin creatinine ratio, and HbA1c levels.

Journal: Journal of Natural Science, Biology and Medicine

Year of Publication: 2015

Publication issue: 6

Page numbers: S89-S92

SHORTLINK: bit.ly/1ZulFgN

Title: Accuracy of urea breath test in Helicobacter pylori infection: Meta-analysis

Author(s): Ferwana, M., Abdulmajeed, I., Alhajahmaed, A., Madani, W., Firwana, B. et al.

Affiliation: National and Gulf Center for Evidence-Based Health Practice, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; University of Missouri Columbia, Missouri, MO, USA; Mayo Clinic, Rochester, MN, United States; Allegheny General Hospital, Pittsburgh, PA, USA; et al.

Abstract:

AIM: To quantitatively summarize and appraise the available evidence of urea breath test (UBT) use to diagnose Helicobacter pylori (H. pylori) infection in patients with dyspepsia and provide pooled diagnostic accuracy measures.

METHODS: We searched MEDLINE, EMBASE, Cochrane library and other databases for studies addressing the value of UBT in the diagnosis of H. pylori infection. We included cross-sectional studies that evaluated the diagnostic accuracy of UBT in adult patients with dyspeptic symptoms. Risk of bias was assessed using QUADAS (Quality Assessment of Diagnostic Accuracy Studies)-2 tool. Diagnostic accuracy measures were pooled using the random-effects model. Subgroup analysis was conducted by UBT type (^{13}C vs ^{14}C) and by measurement technique (Infrared spectrometry vs Isotope Ratio Mass Spectrometry).

RESULTS: Out of 1380 studies identified, only 23 met the eligibility criteria. Fourteen studies (61%) evaluated ^{13}C UBT and 9 studies (39%) evaluated ^{14}C UBT. There was significant variation in the type of reference standard tests used across studies. Pooled sensitivity was 0.96 (95%CI: 0.95-0.97) and pooled specificity was 0.93 (95%CI: 0.91-0.94). Likelihood ratio for a positive test was 12 and for a negative test was 0.05 with an area under the curve of 0.985. Meta-analyses were associated with a significant statistical heterogeneity that remained unexplained after subgroup analysis. The included studies had a moderate risk of bias.

CONCLUSION: UBT has high diagnostic accuracy for detecting H. pylori infection in patients with dyspepsia. The reliability of diagnostic meta-analytic estimates however is limited by significant heterogeneity.

Journal: World Journal of Gastroenterology

Year of Publication: 2015

Publication issue: 21(4)

Page numbers: 1305-1314

SHORTLINK: bit.ly/1TTjiAG

Title: Relation between glycosylated hemoglobin and lipid and thyroid hormone among patients with type 2 diabetes mellitus at King Abdulaziz Medical City, Riyadh

Author(s): Karar, T., Alhammad, R. I. S., Fattah, M. A., Alanazi, A. & Qureshi, S.

Affiliation: ¹⁻³ College of Applied Medical Sciences, King Saud Bin Abdulaziz University, Riyadh, Saudi Arabia; ⁴⁻⁵ College of Applied Medical Sciences, King Saud Bin Abdulaziz University, Riyadh, Saudi Arabia;

Abstract:

Background:

The main objectives of this study were to: (1) Evaluate the levels of thyroid hormones and glycosylated hemoglobin (HbA1c) among patients, (2) correlate between thyroid hormones and HbA1c and different types of lipids and HbA1c among diabetic patients.

Materials and Methods:

A retrospective chart review study was conducted at Department of Clinical Chemistry, King Abdulaziz Medical City (KAMC) in Riyadh, Saudi Arabia, during the period from August 2014 to December 2014, including 100 male and female patients diagnosed with diabetes mellitus (DM) type 2 and excluding patients with DM type 1. These patients were admitted to the hospital in 2013. Biochemical laboratory results were retrieved from biochemistry laboratory database while age and sex of patients were retrieved from patient files. Statistical analysis was performed using SPSS software conducting frequency analysis and correlation test.

Results:

The result showed increased mean levels of HbA1c (8.4%) and normal level of thyroid stimulating hormone (TSH) (4.5 mIU/L) and T4 (14.1 pmol/L). The results also showed a weak positive correlation between HbA1c and TSH ($r = 0.212$, $P = 0.034$) and insignificant correlation with thyroxin T4 ($r = -0.018$, $P = 0.855$). There was a weak positive correlation between HbA1c and total cholesterol and low density lipoprotein ($r = 0.258$, $P = 0.001$), ($r = 0.297$, $P = 0.003$), respectively.

Conclusion:

It is concluded that increased blood glucose could trigger anterior pituitary gland to increase secretion of TSH, whereas there was no direct correlation between increased glycemic index and the rate of thyroxine secretion. Furthermore, it is concluded that there is an association between blood glucose and some lipid markers.

Journal: Journal of Natural Science, Biology and Medicine

Year of Publication: 2015

Publication issue: 6

Page numbers: S75-S79

SHORTLINK: bit.ly/1TXmW1D

Title: Patient Satisfaction With Nursing Care Measuring Outcomes in an International Setting

Author(s): Alasad, J., Abu Tabar, N., & Aburuz, M. E.

Affiliation: Faculty of Nursing, University of Jordan, Amman, Jordan; College of Nursing, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Department of Clinical Nursing, Applied Science University, Amman, Jordan.

Abstract:

OBJECTIVE: The purpose of this study was to assess patient satisfaction with nursing care.

BACKGROUND: Patients' satisfaction with nursing care is considered an important factor in explaining patient's perceptions of service quality.

METHODS: The study was conducted in a major tertiary hospital in Riyadh, Saudi Arabia. An exploratory approach utilizing cross-sectional survey design was used. Data were collected from 424 patients through patients' interviews using the Arabic version of the Newcastle Satisfaction With Nursing Scale.

RESULTS: The results showed a high level of satisfaction among patients in all hospital areas. Female patients were significantly more satisfied than males with no differences among other groups.

CONCLUSION: Patient satisfaction with nursing care remains an important factor in explaining patients' perceptions of service quality. International healthcare settings should systematically monitor the relationship between nursing care and experience to support quality care provision.

Journal: Journal of Nursing Administration

Year of Publication: 2015

Publication issue: 45(11)

Page numbers: 563-568

SHORTLINK: bit.ly/1Uc1MuR

Title: Patients' experience of being in intensive care units

Author(s): Alasad, J. A., Abu Tabar, N. & Ahmad, M.M.

Affiliation: Faculty of Nursing, The University of Jordan, Amman Jordan; College of Nursing, King Saud bin Abdulaziz University for Health Sciences, National Guard Health Affairs, Riyadh; Faculty of Nursing, University of Jordan.

Abstract:

PURPOSE: The aim of the study was to describe the Jordanian patients' experience during their stay in intensive care units (ICUs) and to explore factors that contribute to positive and negative experiences.

MATERIALS AND METHODS: A descriptive, exploratory design was used. The study was conducted at 3 hospitals in Jordan. Patients were selected from surgical and medical ICUs within 72 hours after transfer to the floor. Data were collected through structured interviews using the Intensive Care Experience Questionnaire with 98 patients.

RESULTS: Data showed high level of awareness among patients to surrounding persons (82.2%) and relatives (90.3%). Although 58% of patients perceived pain as a problem during their stay, patients' perception of the care as good as it should be was generally high (82%). Male and female patients differed significantly in their frightening experiences ($t=-2.559$, $P=.01$).

CONCLUSION: Understanding patients' experiences in the ICU would increase nurses' awareness to patients' stressors. It would help policy makers in designing structural and process-related care activities in a manner that promotes positive patient experiences, which would improve quality of care in general and specifically ICU patients' outcome. The ICU environment was found to adversely affect patients in many aspects. In addition, most patients were able to recall their ICU experience.

Journal: Journal of Critical Care

Year of Publication: 2015

Publication issue: 30(4)

Page numbers:

SHORTLINK: bit.ly/24vWXy5

Title: Objective Structured Video Examination in Psychiatric and Mental Health Nursing: A Learning and Assessment Method

Author(s): Selim, A. A. & Dawood, E.

Affiliation: ¹⁻² Psychiatric and Mental Health Nursing Department, College of Nursing, King Saud bin Abdulaziz University for Health Sciences. Riyadh, Saudi Arabia.

Abstract:

In the current study, the Objective Structured Video Examination (OSVE) was conducted to assess undergraduate nursing students' knowledge, observation, and clinical reasoning related to clinical psychiatric nursing competencies. The OSVE showed acceptable reliability and validity (Cronbach's $\alpha = 0.714$, $r = 0.6$, respectively). Students highly appraised the OSVE because it covered a wide area of knowledge and clinical skills; the examination instructions were clear, concrete, and easily understood; the sounds and pictures of the videos were clear; and the videos simulated real patients. The examination was fair, well-administered, well-structured, and well-sequenced. The OSVE reflected learned skills, it provided opportunities for learning, grades were clearly identified, and it eliminated personal bias. Overall, the OSVE provided a practical and useful experience. On the other hand, some students negatively perceived the OSVE as being stressful and requiring more time.

Journal: Journal of Nursing Education

Year of publication: 2015

Volume: 54(2)

Page numbers: 87-95

SHORTLINK: bit.ly/25JAu2R

Title: Prevalence and Predictors of Immunological Failure among HIV Patients on HAART in Southern Ethiopia

Author(s): Yirdaw, K. D. & Hattingh, S.

Affiliation: Department of Health Studies, University of South Africa, Addis Ababa, Ethiopia; College of Nursing Al-Ahsa, King Saud bin Abdulaziz University for Health Sciences, Eastern Region, Saudi Arabia.

Abstract:

Immunological monitoring is part of the standard of care for patients on antiretroviral treatment. Yet, little is known about the routine implementation of immunological laboratory monitoring and utilization in clinical care in Ethiopia. This study assessed the pattern of immunological monitoring, immunological response, level of immunological treatment failure and factors related to it among patients on antiretroviral therapy in selected hospitals in southern Ethiopia. A retrospective longitudinal analytic study was conducted using documents of patients started on antiretroviral therapy. Adequacy of timely immunological monitoring was assessed every six months the first year and every one year thereafter. Immunological response was assessed every six months at cohort level. Immunological failure was based on the criteria: fall of follow-up CD4 cell count to baseline (or below), or CD4 levels persisting below 100 cells/mm³, or 50% fall from on-treatment peak value. A total of 1,321 documents of patients reviewed revealed timely immunological monitoring were inadequate. There was adequate immunological response, with pediatric patients, females, those with less advanced illness (baseline WHO Stage I or II) and those with higher baseline CD4 cell count found to have better immunological recovery. Thirty-nine patients (3%) were not evaluated for immunological failure because they had frequent treatment interruption. Despite overall adequate immunological response at group level, the prevalence of those who ever experienced immunological failure was 17.6% (n=226), while after subsequent re-evaluation it dropped to 11.5% (n=147). Having WHO Stage III/IV of the disease or a higher CD4 cell count at baseline was identified as a risk for immunological failure. Few patients with confirmed failure were switched to second line therapy. These findings highlight the magnitude of the problem of immunological failure and the gap in management. Prioritizing care for high risk patients may help in effective utilization of meager resources.

Journal: Plos One

Year of publication: 2015

Volume: 10(5)

Page numbers:

SHORTLINK: bit.ly/1X8xNpY

Title: Stepwise evolution of pandrug-resistance in *Klebsiella pneumoniae*

Author(s): Zowawi, H. M., Forde, B. M., Alfaresi, M., Alzarouni, A., Farahat, Y. et al.

Affiliation: University of Queensland, Centre for Clinical Research, Australia; Australian Infectious Diseases Research Centre, University of Queensland, Australia; College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; World Health Organization Collaborating Centre for Infection Prevention and Control, and the Gulf Cooperation Council Center for Infection Control, Riyadh, Saudi Arabia; et al.

Abstract:

Carbapenem resistant Enterobacteriaceae (CRE) pose an urgent risk to global human health. CRE that are non-susceptible to all commercially available antibiotics threaten to return us to the preantibiotic era. Using Single Molecule Real Time (SMRT) sequencing we determined the complete genome of a pandrug-resistant *Klebsiella pneumoniae* isolate, representing the first complete genome sequence of CRE resistant to all commercially available antibiotics. The precise location of acquired antibiotic resistance elements, including mobile elements carrying genes for the OXA-181 carbapenemase, was defined. Intriguingly, we identified three chromosomal copies of an ISEcp1-blaOXA-181 mobile element, one of which has disrupted the mgrB regulatory gene, accounting for resistance to colistin. Our findings provide the first description of pandrug-resistant CRE at the genomic level, and reveal the critical role of mobile resistance elements in accelerating the emergence of resistance to other last resort antibiotics.

Journal: Scientific Reports

Year of Publication: 2015

Publication issue: 5

Page numbers:

SHORTLINK: bit.ly/1UDqjYw

Title: Shared clinical decision making: A Saudi Arabian perspective

Author(s): Al Haqwi, A., Al Drees, T. M., Al Rumayyan, A., Al Farhan, A. I., Alotaibi, S. S., et al.

Affiliation: ^{1,4} Department of Family Medicine, ³ Department of Pediatrics, *College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia*; ² Prince Sultan Military Medical City, Riyadh, the Department of Otolaryngology, ⁵ Diabetic Center, Ministry of Health, Gurrayat, Saudi Arabia; et al.

Abstract:

OBJECTIVES: To determine preferences of patients regarding their involvement in the clinical decision making process and the related factors in Saudi Arabia.

METHODS: This cross-sectional study was conducted in a major family practice center in King Abdulaziz Medical City, Riyadh, Saudi Arabia, between March and May 2012. Multivariate multinomial regression models were fitted to identify factors associated with patients preferences.

RESULTS: The study included 236 participants. The most preferred decision-making style was shared decision-making (57%), followed by paternalistic (28%), and informed consumerism (14%). The preference for shared clinical decision making was significantly higher among male patients and those with higher level of education, whereas paternalism was significantly higher among older patients and those with chronic health conditions, and consumerism was significantly higher in younger age groups. In multivariate multinomial regression analysis, compared with the shared group, the consumerism group were more likely to be female [adjusted odds ratio (AOR) =2.87, 95% confidence interval [CI] 1.31-6.27, p=0.008] and non-dyslipidemic (AOR=2.90, 95% CI: 1.03-8.09, p=0.04), and the paternalism group were more likely to be older (AOR=1.03, 95% CI: 1.01-1.05, p=0.04), and female (AOR=2.47, 95% CI: 1.32-4.06, p=0.008).

CONCLUSION: Preferences of patients for involvement in the clinical decision-making varied considerably. In our setting, underlying factors that influence these preferences identified in this study should be considered and tailored individually to achieve optimal treatment outcomes.

Journal: Saudi Medical Journal

Year of Publication: 2015

Publication issue: 36(12)

Page numbers: 1472-1476

SHORTLINK: bit.ly/1UnxmlA

Title: Antibodies against human platelet alloantigens and human leucocyte antigen class 1 in Saudi Arabian multiparous women and multi-transfused patients

Author(s): Al-Ouda, S. K., Al-Banyan, A. A., Al-Gahtani, F. H., Abdel-Gader, A. M. & Al-Dakhil, L. O.

Affiliation: ¹⁻² Department of Clinical Laboratory Sciences, College of Applied Medical Sciences, Department of Transfusion Medicine, Department of Obstetrics and Gynecology, College of Medicine, King Khalid University Hospital, King Saud University; College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

To determine the frequency of alloimmunization against human platelet antigens (HPAs) and human leucocyte antigen class 1 (HLA1) in multiparous women and multi-transfused patients.

Methods: This prospective study was conducted between January and August 2013, on 50 multiparous women with no history of previous blood transfusion recruited from the Obstetrics and Gynecology Clinic, and 50 patients, who received multiple platelet transfusions, recruited from the Hematology/Oncology Ward, King Khalid University Hospital, Riyadh, Saudi Arabia.

Results: The frequency of alloimmunization among multiparous pregnant women was 76%, as follows: 16% against HLA1 only, 8% against HPAs only, 52% against both HPAs and HLA1 antigens. In multitransfused patients, the rate of alloimmunization was 42% as follows: 2% against HLA1 only, 22% against HPAs only, 18% against both HPAs and HLA1 antigens.

The frequency of alloimmunization increases with the number of pregnancies, but not with the number of platelet transfusions.

Conclusion: Alloimmunization against HPAs and HLA1 is very common among Saudi multiparous women and multi-transfused patients, which encourages the search for the extent of the possible complications in the fetus and newborn and in multitransfused patients and how to prevent their occurrence.

Journal: Saudi Medical Journal

Year of Publication: 2015

Publication issue: 36(6)

Page numbers: 664-669

SHORTLINK: bit.ly/1rbkRlc

Title: Quality of Gastroenterology Research Published in Saudi Arabian Scientific Journals

Author(s): Almaghrabi, M. M., Alamoudi, A. S., Radi, S. A., Merdad, A. A., Makhdoum, A. M. & Batwa, F.

Affiliation: College of Medicine, King Saud Bin Abdulaziz University for Health Sciences, Jeddah, Saudi Arabia; College of Medicine, King Abdulaziz University Hospital, Jeddah, Saudi Arabia; Gastroenterology Unit, King Saud Bin Abdulaziz University for Health Sciences, Jeddah, Saudi Arabia.

Abstract:

BACKGROUND/AIMS: Evidence-based medicine has established itself in the field of gastroenterology. In this study we aim to assess the types of study designs of gastroenterology-related articles published in Saudi scientific journals.

PATIENTS AND METHODS: An online review using PubMed was carried out to review gastroenterology-related articles published in six Saudi medical journals in the time interval from 2003 to 2012. To classify the level of evidence in these articles we employed the Oxford's levels of evidence. One-way analysis of variance was used to compare the levels of evidence between published articles.

RESULTS: A total of 721 gastroenterology-related articles were reviewed, of which 591 articles met our inclusion criteria; 80.7% were level IV. The three most common types of studies we encountered were cross-sectional (33.9%), case reports (27.9%), and case series (18.8%). Forty-three percent of the published research was in the field of hepatobiliary and spleen. The total number of articles increased from 260 articles in the 1st 5-year period (2003-2007) to 330 in the 2nd period (2008-2012). However, no statistically significant difference in the level of evidence was noted. In Annals of Saudi Medicine Journal, articles with level II increased from 0 to 10% with a P value 0.02.

CONCLUSION: In our review of gastroenterology-related published articles in Saudi scientific journals, we observed an increase in the quantity of articles with the quality and level of evidence remaining unchanged. Further research is recommended to explore different reasons.

Journal: Saudi Journal of Gastroenterology

Year of Publication: 2015

Publication issue: 21(2)

Page numbers: 90-94

SHORTLINK: bit.ly/1PfPtZ5

Title: Health education during antenatal care: The need for more

Author(s): Al-Ateeq, M. A. & Al-Rusaies, A. A.

Affiliation: College of Medicine, King Saud Bin Abdul-Aziz University for Health Sciences, Department of Family Medicine and Primary Health Care, King Abdul-Aziz Medical City, National Guard Health Affairs, Riyadh, Saudi Arabia.

Abstract:

The aim of health education during antenatal is to provide advice, education, reassurance and support, to address and treat the minor problems of pregnancy, and to provide effective screening during the pregnancy. Exploring current practices in this regard revealed the need for more organized educational activities to ensure high quality and clients' satisfaction.

Journal: International Journal of Women's Health

Year of Publication: 2015

Publication issue: 7

Page numbers: 239-242

SHORTLINK: bit.ly/1VJTMIX

Title: Menopausal symptoms and quality of life among Saudi women visiting primary care clinics in Riyadh, Saudi Arabia

Author(s): AlDughaiter, A., AlMutairy, H. & AlAteeq, M.

Affiliation: ^{1,3} King Saud Bin Abdul-Aziz University for Health Sciences; Department of Family Medicine and PHC, King Abdul-Aziz Medical City, National Guard Health Affairs, Riyadh, Saudi Arabia.

Abstract:

Objectives: Menopause is associated with somatic, vasomotor, psychological, and sexual complaints that may affect quality of life. We determined the prevalence and severity of menopausal symptoms and their impact on the quality of life among Saudi women visiting primary care centers in Riyadh, Saudi Arabia.

Methods: A cross-sectional study was conducted from October to November 2010. In total, 119 women aged 45–60 years were randomly interviewed using a questionnaire. Participants were divided into three categories: premenopausal (n=31), perimenopausal (n=49), and postmenopausal (n=39). The Menopause Rating Scale (MRS) assessed the prevalence and severity of eleven menopausal symptoms. Mean scores of menopausal categories were compared for different symptoms.

Results: The mean age at menopause was 48.3±3 years (median, 49 years). The symptoms reported to be most prevalent were joint and muscle pain (80.7%), physical and mental exhaustion (64.7%), and hot flushes and sweating (47.1%). Somatic and psychological symptoms were highly prevalent in perimenopausal women compared to other groups. The mean overall quality-of-life score was higher in perimenopausal women, while the total MRS score indicated that the symptoms were mild in severity (MRS = 9).

Conclusion: The prevalence of menopausal symptoms was comparable to previous studies in Asian women; however, the prevalence of classic symptoms of hot flushes and night sweats was lower than reported in Western studies. Saudi women reported an MRS score indicating milder severity of symptoms, reflecting better quality of life and ability to cope with climacteric symptoms.

Journal: International Journal of Women's Health

Year of Publication: 2015

Publication issue: 7

Page numbers: 645-653

SHORTLINK: bit.ly/1Uc4kJx

Title: Dietary products consumption in relation to serum 25-hydroxyvitamin D and selenium level in Saudi children and adults

Author(s): Al-Daghri, N. M., Al-Attas, O., Yakout, S., Aljohani, N., Al-Fawas, H. & Alokail, M. S.

Affiliation: Prince Mutaib Chair for Biomarkers of Osteoporosis, King Saud University Riyadh, Saudi Arabia; College of Science, King Saud University Riyadh, Saudi Arabia; College of Medicine, King Saud Bin Abdulaziz University for Health Sciences Riyadh, Saudi Arabia; College of Food Science and Agriculture, King Saud University Riyadh, Saudi Arabia.

Abstract:

Vitamin D deficiency is a global health threat that has been associated with several chronic diseases. Selenium is an essential trace element because of role in major metabolic processes, immune function, thyroid hormone metabolism, male infertility, neoplasms and cardiovascular disease. We aimed to investigate for the first time in the Saudi population the association between vitamin D and selenium status with various dietary products consumption. A total of 259 children and 95 adults were included in this cross-sectional study. We estimated the consumption frequencies of various dietary food products using a qualitative food frequency questionnaire (FFQ) and also measured serum levels of 25-hydroxyvitamin D and selenium. Associations between variables of interest were assessed. Vitamin D deficiency and insufficiency were observed in 80% of the boys, 90% of the girls, 64% of men and 50% of women. Modest associations were found between mean serum 25 (OH) D concentration and consumption frequencies of fresh milk in children ($r=0.11$; $P<0.05$), more specifically in girls ($r=0.12$; $P<0.05$), and to the overall consumption of dairy products in women ($r=0.12$; $P<0.05$). Vitamin D status was also inversely associated with selenium in adults ($r=-0.43$; $P<0.05$). There was a significant correlation between delta changes of serum selenium, triglycerides and HDL levels (P -values <0.05). Vitamin D and selenium levels are modestly associated with dietary products consumption. Changes in selenium levels were associated with increased serum triglyceride levels, indicating a potential biomarker for cardiovascular risk and dyslipidemia. The widespread vitamin D deficiency observed in the present study highlight the need for adequate fortification of dairy products.

Journal: International Journal of Clinical and Experimental Medicine

Year of Publication: 2015

Publication issue: 8(1)

Page numbers: 1305-1314

SHORTLINK: bit.ly/1Uc3H2I

Title: Effect of course coordinator behavior and motivation on students' achievement: Results from five curriculum blocks of two undergraduate student cohorts at King Saud bin Abdulaziz University of Health Sciences

Author(s): Al-Alwan, I., Baig, L. A., Badri, M., Magzoub, M. E. & Alyousif, S.

Affiliation: ^{1,3-5} King Saud bin Abdulaziz University of Health Sciences, Riyadh, Saudi Arabia; APPNA Institute of Public Health, Jinnah Sindh Medical University, Pakistan.

Abstract:

OBJECTIVE: The purpose of the study was to assess the relationship between students' perception of course/block coordinators performance and attributes with students' assessment scores in respective courses.

METHODS: This retrospective data based study was conducted at the College of Medicine, King Saud bin Abdulaziz University of Health Sciences (KSAU-HS). It was started in March 2013 and completed in June 2013 after the graduation of the fourth cohort. Exam score of 3(rd) and 4(th) cohort of students from the courses taught in the last two years of medical school were correlated with faculty and block evaluation done by the students. Scores from mid-block MCQs, portfolio scores, OSCEs and end-of-block MCQs were obtained.

RESULTS: The Mean scores of all the assessments for all five blocks were not significantly different for both batches. There was significant difference between block coordinators for students' score on portfolio, midterm exam and the final written exam. The students' Score in OSCE had significantly strong correlation with quality of station monitors, coverage of content and flow between stations. Student's perception of the commitment and motivation of the coordinator was strongly correlated with block organization, availability of clinical cases, performance of block coordinator, cooperation with students, and organization of clinical activities.

CONCLUSIONS: Block coordinator's motivation and commitment affects quality of block organization and student's success. Faculty training programs should include block management competencies and components identified through self-determination theory for improving the intrinsic motivation for students' success.

Journal: Pakistan Journal of Medical Sciences

Year of Publication: 2015

Publication issue: 31(2)

Page numbers: 457-461

SHORTLINK: bit.ly/25JC051

Title: A case report of a xanthogranulomatous pyelonephritis case mimicking the recurrence of renal cell carcinoma after partial nephrectomy

Author(s): Aldarrab, R., Malakrash, H. S., Al Khateeb, S. S. & Al Baqami, N. M.

Affiliation: College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Department of Urology, Riyadh Military Hospital, Riyadh, Saudi Arabia; Department of Urology, King Abdulaziz Medical City, Riyadh, Saudi Arabia.

Abstract:

A 44-year-old female presented to the urology clinic with flank pain and tenderness. After full assessment, the patient was booked for surgery for partial nephrectomy and the patient was diagnosed with renal cell carcinoma (RCC) chromophob type. Six months later, the patient came back for follow-up; a mass was detected on the same kidney. Radical nephrectomy was performed to excise what is thought to be a recurrence of RCC and the tissues were sent to pathology. The postoperative pathology report confirmed the presence of xanthogranulomatous pyelonephritis rather than RCC recurrence.

Journal: Urology Annals

Year of Publication: 2015

Publication issue: 7(4)

Page numbers: 524-526

SHORTLINK: bit.ly/1WD6RP9

Title: A novel method for selectively labelling olivocochlear collaterals in the rat

Author(s): Baashar, A., Robertson, D. & Mulders, W. H.

Affiliation: Physiology and Human Biology, University of Western Australia; ²⁻³ Department of Anatomy, College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Jeddah, Saudi Arabia.

Abstract:

Axons of olivocochlear neurons originate from the brainstem and project to the cochlea. A subpopulation, medial olivocochlear (MOC) neurons, also projects collateral branches to the cochlear nucleus. The precise targets of these collaterals are as yet unknown. Previous methods for labelling these collaterals include firstly, cochlear injections of retrograde tracers, but this is technically demanding and can also label afferent projections or secondly, labelling by injecting tracers into the nuclei of origin of MOC neurons. However, this latter method is non-specific because it also labels non-MOC projections. A technique was used to specifically label MOC collaterals, which involved injections of the tracer biocytin at the floor of the fourth ventricle and fixation 3 hours later. Biocytin injections resulted in labelled neurons in the ventral nucleus of the trapezoid body and rostral periolivary nucleus, confirming MOC axonal labelling. Labelled neurons in dorsal cochlear nucleus indicated labelling of the dorsal acoustic stria and these injections were discarded. After selective MOC labelling, collateral branches were found to innervate granule cell regions, medial edge and core of the ventral cochlear nucleus, as well as the dorsal cochlear nucleus, in agreement with previous data. Therefore we conclude that injections at the floor of the fourth ventricle provide a simple, rapid and specific technique for labelling the majority of MOC axons and their collaterals and this technique may assist in defining the precise neuronal targets of olivocochlear collaterals in cochlear nucleus.

Journal: Hearing Research

Year of Publication: 2015

Publication issue: 325

Page numbers: 35-41

SHORTLINK: bit.ly/1VJUpfh

Title: 2015 Guidelines for Osteoporosis in Saudi Arabia: Recommendations from the Saudi Osteoporosis Society

Author(s): Al-Saleh, Y., Sulimani, R., Sabico, S., Raef, H., Fouda, M., et al.

Affiliation: College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; ²⁻³ King Saud University, Riyadh, Saudi Arabia; Department of Medicine, King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia; et al.

Abstract:

BACKGROUND AND OBJECTIVES: To provide guidelines for medical professionals in Saudi Arabia regarding osteoporosis.

DESIGN AND SETTINGS: A panel of 14 local experts in osteoporosis assembled to provide consensus based on the strength of evidence and expert opinions on osteoporosis treatment.

PATIENTS AND METHODS: The Saudi Osteoporosis Society (SOS) formed a panel of experts who performed an extensive published studies search to formulate recommendations regarding prevention, diagnosis, and treatment of osteoporosis in Saudi Arabia. Both local and international published studies were utilized whenever available.

RESULTS: Dual x-ray absorptiometry (DXA) scanning is still the golden standard for assessing bone mineral density (BMD). In the absence of local, country-specific fracture risk assessment tool (FRAX), the SOS recommends using the USA (White) version of the FRAX tool. All women above 60 years of age should be evaluated for BMD. This is because the panel recognized that osteoporosis and osteoporotic fractures occur at a younger age in Saudi Arabia. Hormone replacement therapy (HRT) is not recommended for treating postmenopausal women with osteoporosis. BMD evaluation should be performed 1-2 years after initiating intervention, and the assessment of bone turnover biomarkers should be performed whenever available to determine the efficacy of intervention.

CONCLUSION: All Saudi women above the age of 60 years must undergo a BMD assessment using DXA. Therapy decisions should be formulated with the use of the USA (White) version of the FRAX tool.

Journal: Annals of Saudi Medicine

Year of Publication: 2015

Publication issue: 35(1)

Page numbers: 1-12

SHORTLINK: bit.ly/1X8yGPg

Title: Is the Incidence Trend of Heparin-Induced Thrombocytopenia Decreased by the Increased Use of Low-Molecular-Weight-Heparin?

Author(s): Al-Eidan, F. A. S.

Affiliation: College of Medicine, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Background. The increasing trend of using low-molecular-weight-heparin (LMWH) versus unfractionated heparin (UFH) in hospitalized adult patients is raising concerns about the incidence of heparin-induced thrombocytopenia (HIT).

Method. A retrospective study analyzed the requests for heparin-induced antibodies by enzyme-linked immunosorbent assay (ELISA) among adult hospitalized patients during the period from January 2011 to December 2013. These patients received either UFH or LMWH for prevention or therapeutic indications. Those with positive immune-mediated HIT were identified and considered as case patients.

Result. The usage of LMWH and UFH and development of HIT was determined during the study period. The incidence of HIT in patients receiving UFH and those receiving LMWH was 4.09 per thousand patients and 0.48 per thousand patients, respectively, ($p < 0.0001$) with an overall incidence of 2.49 per thousand patients.

Conclusion. The increased trend of using LMWH over UFH among hospitalized adult patients was observed and can be said to contribute to the diminished overall incidence of HIT.

Journal: Mediterranean Journal of Hematology and Infectious Diseases

Year of Publication: 2015

Publication issue: 7

Page numbers: -

SHORTLINK: bit.ly/25KbnAq

Title: Pharmacotherapy of heparin-induced thrombocytopenia: Therapeutic options and challenges in the clinical practices

Author(s): Al-Eidan, F. A. S.

Affiliation: College of Medicine, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Heparin-induced thrombocytopenia (HIT) is an immune response to heparin associated with significant morbidity and mortality in hospitalized patients if unidentified as soon as possible, owing to thromboembolic complications involving both arterial and venous systems. Early diagnoses based on a comprehensive interpretation of clinical and laboratory information improves clinical outcomes. Management principles of strongly suspected HIT should not be delayed for laboratory result confirmation. Treatment strategies have been introduced including new, safe, and effective agents. This review summarizes the clinical therapeutic options for HIT addressing the use of parenteral direct thrombin inhibitors and indirect factor Xa inhibitors as well as the potential non-vitamin K antagonist oral anticoagulants.

Journal: Journal of Vascular Nursing

Year of Publication: 2015

Publication issue: 33(1)

Page numbers: 10-20

SHORTLINK: bit.ly/1YcCIFS

Title: The prevalence of chronic obstructive pulmonary disease in Riyadh, Saudi Arabia: a BOLD study

Author(s): Al Ghobain, M., Alhamad, E. H., Alorainy, H. S., Al Kassimi, F., Lababidi, H. & Al-Hajjaj, M. S.

Affiliation: King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; ^{2,4,6} College of Medicine, King Saud University, Riyadh, Saudi Arabia; ³ King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia; ⁵ King Fahad Medical City, Riyadh, Saudi Arabia.

Abstract:

OBJECTIVE: To estimate the prevalence and associated risk factors of chronic obstructive pulmonary disease (COPD) in Saudi adults aged ≥ 40 years using standardised post-bronchodilator spirometry according to the Burden of Obstructive Lung Disease (BOLD) protocol.

METHODS: Saudi men and women aged ≥ 40 years were recruited by stratified multistage random sampling in Riyadh, Saudi Arabia. Participants completed questionnaires on respiratory symptoms and exposure to risk factors for COPD. Spirometry was performed according to standard methods. COPD was defined as post-bronchodilator FEV₁/FVC (forced expiratory volume in 1 s/forced vital capacity) ratio <70% (Global Initiative for Obstructive Lung Disease [GOLD]) or less than the lower limit of normal (LLN) (95th) percentile) of the population distribution for FEV₁/FVC.

RESULTS: Seven hundred subjects underwent acceptable post-bronchodilator spirometry. The overall prevalence of GOLD COPD was 4.2% (men 5.7%, women 2.5%). The overall prevalence of COPD stage 1 or higher using the LLN was lower than estimates using the GOLD criteria (3.2%). The overall prevalence of GOLD stage 2 or higher COPD was 3.7%. Male sex, increasing age and smoking were significantly associated with COPD diagnosis.

CONCLUSION: The overall prevalence of COPD in Saudi Arabia is 4.2%. Male, increasing age and smoking were the main risk factors for COPD.

Journal: International Journal of Tuberculosis and Lung Disease

Year of Publication: 2015

Publication issue: 19(10)

Page numbers: 1252-1257

SHORTLINK: bit.ly/1PpXhE

Title: Epidemiological and clinical characteristics, spirometric parameters and response to budesonide/formoterol in patients attending an asthma clinic: An experience in a developing country

Author(s): Imad, H. & Yasir, G.

Affiliation: Saud bin Abdulaziz University for Health Sciences, Department of Medicine, King Abdulaziz Medical City, Riyadh, Saudi Arabia; Department of Medicine, National Ribat University Hospital, Sudan.

Abstract:

INTRODUCTION:

This study aims at describing the epidemiological and clinical characteristics, severity, reversibility testing and response to treatment using simple spirometry in asthmatic patients attending a model specialized Asthma Care Center.

METHODS:

Eligible subjects must have a suggestive clinical picture and confirmed by spirometry to have a 12% plus 200ml absolute increase in FEV1 either by reversibility testing or after a therapeutic trial with inhaled and/or oral steroid therapy. Budesonide-Formoterol Turbohaler was used for reversibility testing and for maintenance therapy with or without the addition of oral prednisolone.

RESULTS:

One hundred and nineteen patients were eligible for the study. Age ranged between 10 -70 years. One hundred and thirteen patients (95.0%) had an FEV1 less than 80% of predicted. One hundred and five patients (88.2%) had reversibility testing of whom 72 (68.6%) had a significant reversibility. Sixty two patients (52.1%) were prescribed Budesonide-Formoterol Turbohaler only whilst 57 were prescribed both Budesonide-Formoterol Turbohaler and oral prednisolone. Patients were reviewed after a mean of 14.9 days (range 6.0-28.0). Seventy two patients (60.5%) had increased their FEV1 to more than 80% of their predicted value. By logistic regression analysis, predicted FEV1 at baseline was a significant negative predictor of a complete response.

CONCLUSION:

Most patients had abnormal spirometry with more than half having an FEV1 that is 60% or less of their predicted normal reading. Reversibility testing using Budesonide-Formoterol Turbohaler confirmed the fast onset of action of its Formoterol component and helped in cutting the cost of this test. The majority improved with treatment with 60% normalizing their spirometry highlighting the feasibility and applicability of specialized asthma care centers in resource-poor countries.

Journal: Pan African Medical Journal

Year of Publication: 2015

Publication issue: 21

Page numbers: -

SHORTLINK: bit.ly/1rbmejY

Title: Community- versus nosocomial-acquired severe sepsis and septic shock in patients admitted to a tertiary intensive care in Saudi Arabia, etiology and outcome

Author(s): Baharoon, S., Telmesani, A., Tamim, H., Alsafi, E., Aljohani, S. et al.

Affiliation: ¹⁻² King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Clinical Research Institute, American University of Beirut Medical Center, Beirut, Lebanon; King Saud Chest Specialty Hospital, Riyadh, Saudi Arabia; et al.

Abstract:

Background: Sepsis syndrome is a major worldwide cause of morbidity and mortality. While community-acquired severe sepsis and septic shock constitutes a major cause of admission to the intensive care unit, hospital-acquired severe sepsis and septic shock remain major preventable causes of ICU admission. This study evaluates the rate, etiology, complication and outcome of community- and hospital-acquired sepsis in a tertiary care hospital in Saudi Arabia.

Method: This is a retrospective evaluation of all admissions with severe sepsis and septic shock to a general intensive care unit over a period of six months.

Results: A total number of 96 patients were included, which represented 15% of the total number of admissions during the study period. The mean age was 57.4 (SD 21). Sixty percent of cases were due to hospital-acquired infections, and 40% were community-acquired. The majority of the infections acquired in the hospital occurred in medical wards and intensive care units (27% and 21%, respectively). At least one co-morbid condition was present in 94% of the sample patients, with cardiovascular disease and diabetes being the most frequently encountered disorders (58%). Both community and hospital-acquired severe sepsis and septic shock carry very high mortality (58%). The ICU length of stay was significantly longer for hospital and ICU acquired infections.

Conclusion: Both community and hospital-acquired infections carry high mortality. Hospital-acquired severe sepsis is frequent in medical wards and ICUs, and measures to further evaluate risk factors are prudent.

Journal: Journal of Infection and Public Health

Year of Publication: 2015

Publication issue: 8(5)

Page numbers: 418-424

SHORTLINK: bit.ly/28hx2Pi

Title: In vivo examination of the anticoagulant effect of the Brassica Oleracea methanol extract

Author(s): Khan, R. A., Asad, T., Ferox, Z. & Ahmed, M.

Affiliation: College of Medicine, Jeddah, King Saud bin Abdulaziz University for Health Sciences, KSA; Bahria University Medical and Dental College, Karachi, Pakistan; King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Department of Pharmaceutical Chemistry, University of Karachi, Pakistan.

Abstract:

The anticoagulant effect of the methanol extract of Brassica oleracea var. capitata (MEB) was examined in rabbits. The animals were divided into five groups, each comprising seven animals.

Three groups were administered increasing doses of MEB (200, 300, and 500 mg/kg, respectively); one group received warfarin (0.54 mg/kg); animals in the control group received saline (1 ml/day equivalent to the volume of doses applied to the treated and standard animals). Biochemical tests were performed on the 16th and 31st days of dosing. Animals that were administered MEB (500 mg MEB/kg) 30 days displayed increases of 24.07 s, 28.79 s and 4.08 s in activated partial thromboplastin (aPTT), fibrinogen (Fg) and thrombin time (TT). Compared to the control, the increase in aPTT and Fg was highly significant and the increase in TT was significant. The anticoagulant effect exhibited by MEB in rabbits may be due to inactivation or inhibition of factors affecting coagulation.

Journal: Archives of Biological Sciences

Year of Publication: 2015

Publication issue: 67(2)

Page numbers: 631-638

SHORTLINK: bit.ly/1sv3HR0

Title: TRPM2-mediated intracellular Zn²⁺ release triggers pancreatic β -cell death Need internet access

Author(s): Manna, P. T., Munsey, T. S., Abuarab, N., Fangfang, L. & Asipu, A. et al.

Affiliation: School of Biomedical Sciences, University of Leeds, U.K; College of Medicine, King Saud Bin Abdulaziz University for Health Sciences, Jeddah, Saudi Arabia; School of Medicine, University of Leeds, U.K; Multidisciplinary Cardiovascular Research Centre, University of Leeds, U.K. et al.

Abstract:

Reactive oxygen species (ROS) can cause pancreatic β -cell death by activating transient receptor potential (melastatin) 2 (TRPM2) channels. Cell death has been attributed to the ability of these channels to raise cytosolic Ca²⁺. Recent studies however revealed that TRPM2 channels can also conduct Zn²⁺, but the physiological relevance of this property is enigmatic. Given that Zn²⁺ is cytotoxic, we asked whether TRPM2 channels can permeate sufficient Zn²⁺ to affect cell viability. To address this, we used the insulin secreting (INS1) β -cell line, human embryonic kidney (HEK)-293 cells transfected with TRPM2 and pancreatic islets. H₂O₂ activation of TRPM2 channels increases the cytosolic levels of both Ca²⁺ and Zn²⁺ and causes apoptotic cell death. Interestingly, chelation of Zn²⁺ alone was sufficient to prevent β -cell death. The source of the cytotoxic Zn²⁺ is intracellular, found largely sequestered in lysosomes. Lysosomes express TRPM2 channels, providing a potential route for Zn²⁺ release. Zn²⁺ release is potentiated by extracellular Ca²⁺ entry, indicating that Ca²⁺-induced Zn²⁺ release leads to apoptosis. Knockout of TRPM2 channels protects mice from β -cell death and hyperglycaemia induced by multiple low-dose streptozotocin (STZ; MLDS) administration. These results argue that TRPM2-mediated, Ca²⁺-potentiated Zn²⁺ release underlies ROS-induced β -cell death and Zn²⁺, rather than Ca²⁺, plays a primary role in apoptosis.

Journal: Biochemical Journal

Year of Publication: 2015

Publication issue: 466(3)

Page numbers: 537-546

SHORTLINK: bit.ly/1rbninM

Title: The anterior talofibular ligament: A detailed morphological study

Author(s): Khawaji, B. & Soames, R.

Affiliation: Centre for Anatomy and Human Identification, University of Dundee, Dundee, UK; College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Jeddah, Saudi Arabia.

Abstract:

The anterior talofibular ligament (ATFL) is commonly injured and may result in ankle instability. Good results from ATFL reconstruction have been reported; however complications and movement restrictions have also been observed. ATFL differences have been reported; however details of its precise bony attachment are lacking. This study provides a detailed morphology of the ATFL with respect to surgical and clinical applications. ATFL morphology, number of bands and the exact insertion points were studied in 50 formaldehyde embalmed feet. ATFL length was measured in different joint positions to assess its functional role: ATFL length varied from 18.81 mm in dorsiflexion to 21.06 mm in plantarflexion: mid-length width and thickness were 4.97 mm and 1.01 mm respectively. The bony attachment lengths were also measured: mean proximal and distal bony attachment lengths were 4.68 mm and 3.1mm respectively, while 13.04 mm had no bony attachment. One (22.9%), two (56.3%) and three (20.8%) band morphologies were observed originating 10.37 mm anterosuperior to the lateral malleolar tip and inserting 3.92 mm anterior to the anterior lateral malleolar line (ALML). Detailed morphology of the ATFL may help in restoring injured ATFL function by appropriate ligament reconstruction, as well as aid the understanding of the mechanism of ligament injury.

Journal: Foot

Year of Publication: 2015

Publication issue: 25(3)

Page numbers: 141-147

SHORTLINK: bit.ly/1Uc5xR6

Title: Saddle pulmonary embolus and bronchiolitis obliterans with organizing pneumonia develop simultaneously after first cyclophosphamide, methotrexate, 5FU chemotherapy for breast cancer

Author(s): Al-Hameed, F. M.

Affiliation: Department of Intensive Care, King Saud bin Abdulaziz University for Health Sciences, King Abdulaziz Medical City, Jeddah, Saudi Arabia.

Abstract:

A 62-year-old woman underwent a right mastectomy with axillary node dissection for a poorly differentiated ductal carcinoma. One month later, she underwent a left nephrectomy for a renal cell carcinoma. Two weeks after, she received her first cycle of cyclophosphamide, methotrexate, and 5FU (CMF) as a part of her breast cancer treatment. We describe an unusual case of nonocclusive saddle pulmonary embolus with extensive bilateral deep vein thrombosis and severe bronchiolitis obliterans with organizing pneumonia developing simultaneously after the first CMF chemotherapy for breast cancer.

Journal: Saudi Medical Journal

Year of Publication: 2015

Publication issue: 36(6)

Page numbers: 746-749

SHORTLINK: bit.ly/1UnzedU

Title: Delayed presentation of a duodenal web

Author(s): AlGhannam, R. & Yousef, Y. A.

Affiliation: King Saud Bin Abdulaziz University for Health Sciences, College of Medicine-Jeddah, Saudi Arabia; King AbdulAziz Medical City, Jeddah, Ministry of National Guard, Jeddah, Saudi Arabia.

Abstract:

Duodenal atresia and web are common causes of intestinal obstruction in early infancy. Their incidence ranges between 1 in 10,000 to 1 in 40,000 live births. Unlike duodenal atresia which is diagnosed early, even antenatal; a web presents later depending on the size of the aperture in the web. It usually presents with bilious or non-bilious vomiting. We present an unusual presentation of duodenal web in a three and a half years old boy who presented with a 12 months history of abdominal distension and vomiting every 2nd or 3rd day. Plain abdominal imaging showed radiopaque foreign bodies below the diaphragm. As the natural history for majority of ingested foreign bodies is natural passage; He was managed expectantly elsewhere. Eventually, 12 months later, the patient presented to our center where further investigation provided the diagnosis. He was treated surgically by excision of the web. Post operatively, TPN and a trans-anastomotic tube (TAT) were used until full recovery was achieved. A high index of suspicion is the key to reaching the true diagnosis in patients presenting after the neonatal period.

Journal: Journal of Pediatric Surgery Case Reports

Year of Publication: 2015

Publication issue: 3(12)

Page numbers: 530-533

SHORTLINK: bit.ly/1PfQdgG

Title: Severe Vitamin D Deficiency: A Significant Predictor of Early Hypocalcemia after Total Thyroidectomy

Author(s): Al-Khatib, T., Althubaiti, A. M., Althubaiti, A., Mosli, H. H., Alwasiah, R.O. & Badawood, L. M.
Affiliation: ^{1-2,6} Faculty of Medicine, King Abdulaziz University, Jeddah University, Jeddah, Saudi Arabia; College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Endocrinology and Metabolism Division, King Abdulaziz University, Jeddah, Saudi Arabia.

Abstract:

OBJECTIVE: To assess the role of preoperative serum 25 hydroxyvitamin D as predictor of hypocalcemia after total thyroidectomy.

STUDY DESIGN: Retrospective cohort study.

SETTING: University teaching hospital.

SUBJECTS AND METHODS: All consecutively performed total and completion thyroidectomies from February 2007 to December 2013 were reviewed through a hospital database and patient charts. The relationship between postthyroidectomy laboratory hypocalcemia (serum calcium ≤ 2 mmol/L), clinical hypocalcemia, and preoperative serum 25 hydroxyvitamin D level was evaluated.

RESULTS: Two hundred thirteen patients were analyzed. The incidence of postoperative laboratory and clinical hypocalcemia was 19.7% and 17.8%, respectively. The incidence of laboratory and clinical hypocalcemia among severely deficient (< 25 nmol/L), deficient (< 50 nmol/L), insufficient (< 75 nmol/L), and sufficient (≥ 75 nmol/L) serum 25 hydroxyvitamin D levels was 54% versus 33.9%, 10% versus 18%, 2.9% versus 11.6%, and 3.1% versus 0%, respectively. Multiple logistic regression analysis revealed preoperative severe vitamin D deficiency as a significant independent predictor of postoperative hypocalcemia (odds ratio [OR], 7.3; 95% confidence interval [CI], 2.3-22.9; $P = .001$). Parathyroid hormone level was also found to be an independent predictor of postoperative hypocalcemia (OR, 0.6; 95% CI, 0.5-0.8; $P = .002$).

CONCLUSION: Postoperative clinical and laboratory hypocalcemia is significantly associated with low levels of serum 25 hydroxyvitamin D. Our findings identify severe vitamin D deficiency (< 25 nmol/L) as an independent predictor of postoperative laboratory hypocalcemia. Early identification and management of patients at risk may reduce morbidity and costs.

Journal: Otolaryngology-Head and Neck Surgery

Year of Publication: 2015

Publication issue: 152(3)

Page numbers: 424-431

SHORTLINK: bit.ly/1rbn3t0

Title: The Saudi Thoracic Society guidelines for influenza vaccinations

Author(s): Zeitouni, M. O., Al Barrak, A. M., Al-Moamary, M. S., Idrees, M. M., Alharbi, N. S., et al.

Affiliation: Department of Medicine, King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia; Department of Internal Medicine, Prince Sultan Military Medical City, Riyadh, Saudi Arabia; College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Department of Pediatrics, King Saud University, Riyadh, Saudi Arabia; et al.

Abstract:

Influenza viruses are responsible for the influenza outbreaks that lead to significant burden and cause significant morbidity and mortality worldwide. Based on the core proteins, influenza viruses are classified into three types, A, B, and C, of which only A and B cause significant human disease and so the vaccine is directed against these two subtypes only. The effectiveness of the vaccine depends on boosting the immune system against the serotypes included within it. As influenza viruses undergo periodic changes in their antigen, the vaccine is modified annually to ensure susceptibility. In contrast to other countries, Saudi Arabia faces a unique and challenging situation due to Hajj and Umrah seasons, when millions of people gather at the holy places in Mecca and Madinah, during which influenza outbreaks are commonly found. Such challenges making the adoption of strict vaccination strategy in Saudi Arabia is of great importance. All efforts were made to develop this guideline in an easy-to-read form, making it very handy and easy to use by health care workers. The guideline was designed to provide recommendations for problems frequently encountered in real life, with special consideration for special situations such as Hajj and Umrah seasons and pregnancy.

Journal: Annals of Thoracic Medicine

Year of Publication: 2015

Publication issue: 10(4)

Page numbers: 223-230

SHORTLINK: bit.ly/1temhNZ

Title: The Empirical Distribution of the Singular Values of a Random Hankel Matrix

Author(s): Ghodsi, M., Alharbi, N. & Hassani, H.

Affiliation: The Statistical Research Centre, Business School, Bournemouth University, UK;
Statistical Research Centre, Business School, Bournemouth University, UK; King Saud bin Abdulaziz University For Health Sciences, Riyadh, Saudi Arabia.

Abstract:

The empirical distribution of the eigenvalues of the matrix HH^T divided by its trace is considered, where H is a Hankel random matrix. The normal distribution with different parameters is considered and the effect of scale and shape parameters are evaluated. The correlation among eigenvalues are assessed using parametric and non-parametric association criteria.

Journal: Fluctuation and Noise Letters

Year of Publication: 2015-

Publication issue: 14(3)

Page numbers:

SHORTLINK: bit.ly/1YcEbMn

Title: Antimicrobial resistance: one world, one fight!

Author(s): Harbarth, S., Balkhy, H. H., Goossens, H., Jarlier, V., Kluytmans, J., et al.

Affiliation: Infection Control Programme and WHO Collaborating Centre on Patient Safety, Geneva University Hospitals and Faculty of Medicine, Geneva, Switzerland; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Vaccine and Infectious Disease Institute, University of Antwerp, Belgium; Publique-Hôpitaux de Paris, Université Pierre et Marie Curie-Paris, France; Julius Center for Health Sciences and Primary Care, Utrecht, Netherlands; et al.

Abstract:

The lack of new antibiotic classes calls for a cautious use of existing agents. Yet, every 10 min, almost two tons of antibiotics are used around the world, all too often without any prescription or control. The use, overuse and misuse of antibiotics select for resistance in numerous species of bacteria which then renders antimicrobial treatment ineffective. Almost all countries face increased antimicrobial resistance (AMR), not only in humans but also in livestock and along the food chain. The spread of AMR is fueled by growing human and animal populations, uncontrolled contamination of fresh water supplies, and increases in international travel, migration and trade. In this context of global concern, 68 international experts attending the fifth edition of the World HAI Resistance Forum in June 2015 shared their successes and failures in the global fight against AMR. They underlined the need for a "One Health" approach requiring research, surveillance, and interventions across human, veterinary, agricultural and environmental sectors. This strategy involves concerted actions on several fronts. Improved education and increased public awareness are a well-understood priority. Surveillance systems monitoring infections need to be expanded to include antimicrobial use, as well as the emergence and spread of AMR within clinical and environmental samples. Adherence to practices to prevent and control the spread of infections is mandatory to reduce the requirement of antimicrobials in general care and agriculture. Antibiotics need to be banned as growth promoters for farm animals in countries where it has not yet been done. Antimicrobial stewardship programmes in animal husbandry have proved to be efficient for minimising AMR, without compromising productivity. Regarding the use of antibiotics in humans, new tools to provide highly specific diagnoses of pathogens can decrease diagnostic uncertainty and improve clinical management. Finally, infection prevention and control measures – some of them as simple as hand hygiene – are essential and should be extended beyond healthcare settings. Aside from regulatory actions, all people can assist in AMR reduction by limiting antibiotic use for minor illnesses. Together, we can all work to reduce the burden of AMR.

Journal: Antimicrobial Resistance and Infection Control

Year of Publication: 2015

Publication issue: 4

Page numbers: -

SHORTLINK: bit.ly/1YcE2bJ

Title: Development of a Novel, Multilayered Presentation Format for Clinical Practice Guidelines

Author(s): Kristiansen, A., Brandt, L., Alonso-Coello, P., Agoritsas, T., Akl, E. A., et al.

Affiliation: Diakonhjemmet Hospital, Oslo, Norway; Sant Pau, Spain; McMaster University, Canada; American University of Beirut, Lebanon; National & Gulf Center for Evidence Based Health Practice, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

BACKGROUND:

Bridging the gap between clinical research and everyday health-care practice requires effective communication strategies. To address current shortcomings in conveying practice recommendations and supporting evidence, we are creating and testing presentation formats for clinical practice guidelines.

METHODS:

We carried out multiple cycles of brainstorming and sketching, developing a prototype. Physicians participating in the user testing viewed CPG formats linked to clinical scenarios and engaged in semistructured interviews applying a think-aloud method for exploring important aspects of user experience.

RESULTS:

We developed a multilayered presentation format that allows clinicians to successively view more in-depth information. Starting with the recommendations, clinicians can, on demand, access a rationale and a key information section containing statements on quality of the evidence, balance between desirable and undesirable consequences, values and preferences, and resource considerations. We collected feedback from 27 stakeholders and performed user testing with 47 practicing physicians from six countries. Advisory group feedback and user testing of the first version revealed problems with conceptual understanding of underlying CPG methodology, as well as difficulties with the complexity of the layout and content. Extensive revisions made before the second round of user testing resulted in most participants expressing overall satisfaction with the final presentation format.

CONCLUSIONS:

We have developed an electronic, multilayered, CPG format that enhances the usability of CPGs for frontline clinicians. We have implemented the format in electronic guideline tools that guideline organizations can now use when authoring and publishing their guidelines.

Journal: Chest

Year of Publication: 2015

Publication issue: 147(3)

Page numbers: 754-763

SHORTLINK: bit.ly/1VJWrMI

Title: Role of Interleukin-I beta in conception after intracytoplasmic sperm injection

Author(s): Rehman, R., Jawed, S., Zaidi, S. F., Baig, M. & Ahmads, K.

Affiliation: Bahria University Medical and Dental College, Karachi; Islam Medical & Dental College, Sailkoat; College of Medicine, King Saud bin Abdulaziz University of Health Sciences, Jeddah, Saudi Arabia; King Abdulaziz University, Jeddah, KSA, University of Toyama, Japan.

Abstract:

OBJECTIVE:

To identify the role of Interleukin-I Beta (IL-1 β) in patients undergoing intracytoplasmic sperm injection.

METHODS:

The quasi-experimental study was conducted at an infertility clinic in Islamabad from June 2010 to August 2011, and comprised couples opting for intracytoplasmic sperm injection. Down regulation of ovaries was followed by calculated stimulation, ovulation induction, oocytes retrieval, intracytoplasmic sperm injection, in vitro maturation of embryos and embryo transfer. Serum Interleukin-I Beta was measured by enzyme-linked immunosorbent assay on ovulation induction day. Patients were grouped as non-pregnant with beta human chorionic gonadotropin 5-25 mIU/ml, pre-clinical abortion; beta human chorionic gonadotropin >25 mIU/ml with no cardiac activity and clinical pregnancy with foetal heart confirmation by trans-vaginal scan after 4 weeks of transfer. SPSS 15 was used for statistical analysis.

RESULTS:

Of the total 323 patients initially registered, embryo transfer could be carried out in 282(87.30%). Clinical pregnancy was achieved in 101(36%) patients, clinical abortions was the result in 61(22%) cases, while 120(42%) subjects did not conceive at all. Clinical pregnancy was achieved in subjects with high mean Interleukin-I Beta levels; 155.84 ± 51.65 compared to 41.81 ± 11.77 and 118.46 ± 35.62 pg/ml in non-pregnant, preclinical abortion groups respectively ($p=0.001$).

CONCLUSION:

The production of Interleukin-I Beta was associated with oocyte maturation, fertilisation, endometrial receptivity and implantation in patients undergoing intracytoplasmic sperm injection.

Journal: Journal of the Pakistan Medical Association

Year of Publication: 2015

Publication issue: 65(1)

Page numbers: 49-53

SHORTLINK: bit.ly/1UwwcDZ

Title: Fecal calprotectin use in inflammatory bowel disease and beyond: A mini-review

Author(s): Alibrahim, B., Aljasser, M. I. & Salh, B.

Affiliation: University of British Columbia, Vancouver, British Columbia & King Faisal Special Hospital and Research Centre; Department of Medicine, King Saud Bin Abdulaziz University for Health Sciences, King Abdulaziz Medical City, Riyadh, Saudi Arabia; University of British Columbia, Vancouver, British Columbia.

Abstract:

Given the number of inflammatory disorders affecting the gastrointestinal tract directly and indirectly, coupled with the considerable overlap with functional disorders, it is evident that more useful noninvasive diagnostic tests are required to aid with diagnosis. If these tests can also have some utility for individual patient follow-up in terms of disease activity and response to treatment, as well as providing forewarning of disease relapse, it would be extremely useful information for the clinician. One recently described test that may fulfill several of these attributes is based on leakage of a mononuclear cell cytoplasmic protein, calprotectin, along the intestinal tract, which can then be quantified in feces. This has been used to distinguish patients exhibiting symptoms of irritable bowel syndrome from patients with inflammatory bowel disease, with a measure of success greater than with currently used techniques. The present article summarizes the experience with this test used in inflammatory bowel disease, as well as a variety of gastrointestinal disorders.

Journal: Canadian Journal of Gastroenterology and Hepatology

Year of Publication: 2015

Publication issue: 29(3)

Page numbers: 157-163

SHORTLINK: bit.ly/215eYT8

Title: The Potential Role of Social Media Platforms in Community Awareness of Antibiotic Use in the Gulf Cooperation Council States: Luxury or Necessity?

Author(s): Zowawi, H. M., Abedalthagafi, M., Mar, F. A., Almalki, T., Kutbi, A. H., et al.

Affiliation: King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia & WHO Collaborating Centre for Infection Prevention and Control and GCC Center for Infection Control, Riyadh, Saudi Arabia; Harvard Medical School, United States; University of California, USA; Taif University, Taif, Saudi Arabia; et al.

Abstract:

The increasing emergence and spread of antimicrobial resistance (AMR) is a serious public health issue. Increasing the awareness of the general public about appropriate antibiotic use is a key factor for combating this issue. Several public media campaigns worldwide have been launched; however, such campaigns can be costly and the outcomes are variable and difficult to assess. Social media platforms, including Twitter, Facebook, and YouTube, are now frequently utilized to address health-related issues. In many geographical locations, such as the countries of the Gulf Cooperation Council (GCC) States (Saudi Arabia, United Arab Emirates, Kuwait, Oman, Qatar, and Bahrain), these platforms are becoming increasingly popular. The socioeconomic status of the GCC states and their reliable communication and networking infrastructure has allowed the penetration and scalability of these platforms in the region. This might explain why the Saudi Ministry of Health is using social media platforms alongside various other media platforms in a large-scale public awareness campaign to educate at-risk communities about the recently emerged Middle East respiratory syndrome coronavirus (MERS-CoV). This paper discusses the potential for using social media tools as cost-efficient and mass education platforms to raise awareness of appropriate antibiotic use in the general public and in the medical communities of the Arabian Peninsula.

Journal: Journal of Medical Internet Research

Year of Publication: 2015

Publication issue: 17(10)

Page numbers:

SHORTLINK: bit.ly/1ZuuV4y

Title: A case of multiple spontaneous keloid scars

Author(s): Jfri, A., Rajeh, N. & Karkashan, E.

Affiliation: King Saud bin Abdulaziz University for Health Sciences; ²⁻³ King Fahad General Hospital, Jeddah, Saudi Arabia.

Abstract:

Keloid scars result from an abnormal healing response to cutaneous injury or inflammation that extends beyond the borders of the original wound. Spontaneous keloid scars forming in the absence of any previous trauma or surgical procedure are rare. Certain syndromes have been associated with this phenomenon, and few reports have discussed the evidence of single spontaneous keloid scar, which raises the question whether they are really spontaneous. Here, we present a 27-year-old mentally retarded single female with orbital hypertelorism, broad nasal bridge, repaired cleft lip and high-arched palate who presented with progressive multiple spontaneous keloid scars in different parts of her body which were confirmed histologically by the presence of typical keloidal collagen. This report supports the fact that keloid scars can appear spontaneously and are possibly linked to a genetic factor. Furthermore, it describes a new presentation of spontaneous keloid scars in the form of multiple large lesions in different sites of the body.

Journal: Case Reports in Dermatology

Year of publication: 2015

Volume: 7

Page numbers: 156-160

SHORTLINK: bit.ly/1Uc9iGd

Title: Molecular genetics of human primary microcephaly: an overview

Author(s): Faheem, M., Naseer, M. I., Rasool, M., Chaudhary, A. G., ... Algahtani, H. A., et al.

Affiliation: ^{1,5} Department of Biochemistry, Faculty of Science, King Abdulaziz University, KSA. ²⁻⁴ Center of Excellence in Genomic Medicine Research, King Abdulaziz University, KSA; ⁵ King Saud bin Abdulaziz University for Health Sciences, KSA.

Abstract:

Autosomal recessive primary microcephaly (MCPH) is a neurodevelopmental disorder that is characterised by microcephaly present at birth and non-progressive mental retardation. Microcephaly is the outcome of a smaller but architecturally normal brain; the cerebral cortex exhibits a significant decrease in size. MCPH is a neurogenic mitotic disorder, though affected patients demonstrate normal neuronal migration, neuronal apoptosis and neural function. Twelve MCPH loci (MCPH1-MCPH12) have been mapped to date from various populations around the world and contain the following genes: Microcephalin, WDR62, CDK5RAP2, CASC5, ASPM, CENPJ, STIL, CEP135, CEP152, ZNF335, PHC1 and CDK6. It is predicted that MCPH gene mutations may lead to the disease phenotype due to a disturbed mitotic spindle orientation, premature chromosomal condensation, signalling response as a result of damaged DNA, microtubule dynamics, transcriptional control or a few other hidden centrosomal mechanisms that can regulate the number of neurons produced by neuronal precursor cells. Additional findings have further elucidated the microcephaly aetiology and pathophysiology, which has informed the clinical management of families suffering from MCPH. The provision of molecular diagnosis and genetic counselling may help to decrease the frequency of this disorder.

Journal: BMC Medical Genomics

Year of publication: 2015

Volume: 8

Page numbers: -

SHORTLINK: bit.ly/1VJZ1Cb

Title: Consensus recommendations for the diagnosis and treatment of multiple sclerosis: The Middle East North Africa Committee for Treatment and Research In Multiple Sclerosis (MENACTRIMS)

Author(s): Yamout, B., Alroughani, R., Al-Jumah, M., Goueider, R., Dahdaleh, M., et al.

Affiliation: American University of Beirut Medical Center, Beirut, Lebanon; Amiri Hospital, Sharq, Kuwait; KAIMRC, King Saud Ben Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Service de Neurologie, Hôpital Razi, Tunis; Al Khalidi Hospital, Amman, Jordan; et al.

Abstract:

With evolving diagnostic criteria and the advent of new oral and parenteral therapies for MS, most current diagnostic and treatment algorithms need re-evaluation and updating. The diagnosis of MS relies on incorporating clinical and paraclinical findings to prove dissemination in space and in time, and exclude alternative diseases that can explain the findings at hand. The differential diagnostic workup should be guided by clinical and laboratory red flags to avoid unnecessary tests. Appropriate multiple sclerosis (MS) therapy selection is critical to maximize patient benefit. The current guidelines review the scientific evidence supporting treatment of acute relapses, radiologically isolated syndrome, and clinically isolated syndrome, relapsing remitting MS, secondary progressive MS, and primary progressive MS. The purpose of these guidelines is to provide practical recommendations and algorithms for the diagnosis and treatment of MS based on current scientific evidence and clinical experience.

Journal: Current Medical Research and Opinion

Year of publication: 2015

Volume: 31(7)

Page numbers: 1349-1361

SHORTLINK: bit.ly/22M6G3M

Title: Physiological Principles That Promote Bone Regeneration and Repair During the Application of Ilizarov Procedure

Author(s): Al-Mohrej, O. A. & Al-Dera, H.

Affiliation: King Saud bin Abdulaziz University for Health Sciences; Department of Basic Medical Sciences, College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

The significant medical discoveries are not serendipitous or fortuitous; bone regeneration is the outcome of painstaking and meticulous efforts devoted to histology, myology, skeletology, cytology, osteology, traumatology and orthopaedics. Bone regeneration, reparative and restorative techniques of bone length discrepancies, correction of posttraumatic and congenital defects and deformities can be induced through distraction osteogenesis which is achieved by Ilizarov device. It helps in regenerating bone and tissue formation through tensile force or distraction tension stress. A gap is made by the external fixator in the bone ends to be filled in with natural bone and tissue cells. This technique requires time and periodic adjustments to the external fixator to induce gradual distraction which generates osteogenesis.

Journal: Science of Advanced Materials

Year of Publication: 2015

Publication issue: 7(10)

Page numbers: 2134-2146

SHORTLINK: bit.ly/1X8Bn37

Title: Association of DNA Repair Gene APE1 Asp148Glu Polymorphism with Breast Cancer Risk

Author(s): Almutairi, F., Pathan, A. A. K., Alanazi, M., Shalaby, M. ... Khan, W., et al.

Affiliation: King Saud University, Riyadh, Saudi Arabia; Integrated Gulf Biosystems, Riyadh, Saudi Arabia; Genetic Engineering and Biotechnology Research Institute, Alexandria, Egypt; College of Science and Health Professions, King Saud Bin Abdul Aziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

The aim of this study was to investigate the role of APE1 Asp148Glu polymorphism in breast cancer progression in Saudi population.

Methods. We examined the genetic variations (rs1130409) in the DNA base excision repair gene APE1 at codon 148 (Asp148Glu) and its association with breast cancer risk using genotypic assays and in silico structural as well as functional predictions. In silico structural analysis was performed with Asp148Glu allele and compared with the predicted native protein structure. The wild and mutant 3D structures of APE1 were compared and analyzed using solvent accessibility models for protein stability confirmation. **Results.** Genotypic analysis of APE1 (rs1130409) showed statistically significant association of Asp148Glu with elevated susceptibility to breast cancer. The in silico analysis results indicated that the nsSNP Asp148Glu may cause changes in the protein structure and is associated with breast cancer risk. **Conclusion.** Taken together, this is the first report that established that Asp148Glu variant has structural and functional effect on the APE1 and may play an important role in breast cancer progression in Saudi population.

Journal: Disease Markers

Year of Publication: 2015

Publication issue: -

Page numbers: -

SHORTLINK: bit.ly/1t5520M

Title: Detection and phylogenetic analysis of human pegivirus (GBV-C) among blood donors and patients infected with hepatitis B virus (HBV) in Qatar

Author(s): Abuodeh, R. O., Al-Absi, E., Ali, N. H., Khalili, M., Al-Mawlawi, N., et al.

Affiliation: College of Science and Health Professions, King Saud bin Abdulaziz University for Health Sciences, Jeddah, Saudi Arabia; ²⁻³ College of Arts and Sciences and Biomedical Research Center, Qatar University, Doha, Qata; Department of Laboratory Medicine and Pathology, Hamad Medical Corporation, Qatar; et al.

Abstract:

Human Pegivirus (HPgV), formerly GB virus-C/Hepatitis G virus (GBV-C/HGV), collectively known as GBV-C, is widely spread and has been reported to be associated with non-A–E hepatitis. To our knowledge, no previous study was conducted about HPgV in Qatar. Thus, the objectives of this study were as follows: (i) to determine the rates of HPgV infection in Qatar among healthy blood donors and HBV-infected patients, and (ii) to determine the most predominant HPgV genotype in Qatar. A total of 714 blood plasma samples from healthy donors (612) and HBV-infected patients (102) were collected. RNA was extracted, reversed transcribed, and then subjected for HPgV detection by two round-nested PCR using primers amplifying a 208 bp of 5' -UTR of the HPgV. For genotyping, the 5' -UTR PCR products (from 25 randomly picked samples) were cloned and sequenced. The overall infection rate of HPgV in Qatar was 13.3%. There was no significant difference ($P=0.41$) in the infection rates between healthy donor (13.7%) and in HBV-infected patients (10.7%). Moreover, we did not find any significant association between HPgV infection rates and nationality, sex, or age ($P>0.05$). Sequence analysis of 40 5' -UTR PCR amplicons yielded the European genotype 2 as most predominant in Qatar, although other genotypes (5 and 7) were also present. Our results indicate that there is no strong correlation between HPgV infection rate, condition, nationality, age, and sex, and genotype 2 is most predominant in Qatar.

Journal: Journal of Medical Virology

Year of Publication: 2015

Publication issue: 87(12)

Page numbers: 2074-2081

SHORTLINK: bit.ly/1t55tbt

Title: Spectroscopic and thermodynamic properties of recombinant heat shock protein A6 from *Camelus dromedarius*

Author(s): Malik, A., Haroon, A., Jagirdar, H., Alsenaidy, A. M. ... Khan, W., et al.

Affiliation: College of Science, King Saud University, Saudi Arabia; College of Science and Health Professions, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract: Heat shock protein A6, also known as HSP70B¹, is a member of the Hsp70 family of molecular chaperones. Under stressed conditions, the level of HSPA6 increases substantially, and the protein has been targeted as a biomarker of cellular stress in several studies. We report the spectroscopic and thermodynamic properties of Arabian camel species cHSPA6, determined by measurement of intrinsic and extrinsic fluorescence emission, and use of far-UV circular dichroism and dynamic multimode spectroscopy. Our results showed that cHSPA6 has similar binding affinity for both ATP and ADP ($K_D = \sim 50$ nM). Binding of ATP and ADP reduced the surface hydrophobicity of the protein, and slightly altered its secondary structure, suggesting localized conformational rearrangement after ATP or ADP binding. Dynamic multimode spectroscopy revealed that cHSPA6 unfolds through three transitions with melting points (T_m) of 42.3 ± 0.2 , 61.3 ± 0.1 , and 81.2 ± 0.2 °C. To the best of the author's knowledge, and literature search, this is the first report of the spectroscopic and thermodynamic properties of the Arabian camel heat shock protein.

Journal: European Biophysics Journal with Biophysics Letters

Year of Publication: 2015

Publication issue: 44(1-2)

Page numbers: 17-26

SHORTLINK: bit.ly/1TTovlH

Title: Decline in menarcheal age among Saudi girls

Author(s): Al Alwan, I. A., Ibrahim, A. A., Badri, M. A., Al Dubayee, M. S. & Bin-Abbas, I. A.

Affiliation: Educational Affairs, College of Science and Health Professions, King Saud Bin Abdulaziz University for Health Sciences, Department of Basic Sciences,, Children's Hospital, King Fahad Medical City, Ministry of National Guard Health Affairs, and the Department of Pediatrics.

Abstract:

Objectives: To estimate age at menarche and to assess trends in menarcheal age among Saudi women. **Methods:** A prospective longitudinal study was conducted among healthy prepubertal female school children and adolescents from September 2006 to July 2012 in Riyadh, Saudi Arabia. Study participants were invited from diverse socioeconomic backgrounds. Tanner stage, height, weight, body mass index, and socioeconomic parameters including parent's level of education were collected. Age at menarche was compared with maternal age at menarche.

Results: The study included 265 girls and mothers. Mean standard deviation (SD) age at menarche for girls was 13.08 ± 1.1 years, and their distribution category across the ≤10 years was 4 (1.5%), 11-14 years was 239 (90.2%), and ≥15 years was 22 (8.3%) girls. Anthropometric measurements, mother's level of education, and family income were not statistically significant determining factors associated with age at menarche. Mean SD age at menarche for mothers was 13.67 ± 1.4 years, and their distribution category across the ≤10 years was 7 (2.6%), 11-14 years was 172 (64.9%), and ≥15 years was 86 (32.5%). Girls attained menarche at younger age compared with their mothers (p<0.0001). A downward secular trend in age of menarche was observed (Cuzick test for trend = 0.049).

Conclusion: Saudi girls attain menarcheal age earlier than their mothers, reflecting a downward secular trend in menarcheal age.

Journal: Saudi Medical Journal

Year of Publication: 2015

Publication issue: 36(11)

Page numbers: 1324-1328

SHORTLINK: bit.ly/25KdHYd

Title: Potential Impact of Food Safety Vaccines on Health Care Costs

Author(s): Ghunaim, H. & Desin, T. S.

Affiliation: College of Arts and Science, Qatar University, Qatar; College of Science & Health Professions, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract: Foodborne pathogens continue to cause several outbreaks every year in many parts of the world. Among the bacterial pathogens involved, Shiga toxin-producing *Escherichia coli*, *Campylobacter jejuni*, and nontyphoidal *Salmonella* species cause a significant number of human infections worldwide, resulting in a huge annual economic burden that amounts to millions of dollars in health care costs. Human infections are primarily caused by the consumption of contaminated food. Vaccination of food-producing animals is an attractive, cost-effective strategy to lower the levels of these pathogens that will ultimately result in a safer food supply and fewer human infections. However, producers are often reluctant to routinely vaccinate animals against these pathogens since they do not cause any detectable clinical symptoms. This review highlights recent approaches used to develop effective food safety vaccines and the potential impact these vaccines might have on health care costs.

Journal: Foodborne Pathogens and Disease

Year of Publication: 2015

Publication issue: 12(9)

Page numbers: 733-740

SHORTLINK: bit.ly/1X8CbVO

Title: Possible cause for altered spatial cognition of prepubescent rats exposed to chronic radiofrequency electromagnetic radiation

Author(s): Narayanan, S. N., Kumar, R. S., Karun, K.M., Nayak, S. B. & Bhat, P. G.

Affiliation: ^{1,3} Melaka Manipal Medical College, Manipal University, Manipal, India; Department of Statistics, Manipal University, India; School of Life Sciences, Manipal University, India; College of Science and Health Professions, King Saud Bin Abdulaziz University for Health Sciences, Jeddah, Saudi Arabia.

Abstract:

The effects of chronic and repeated radiofrequency electromagnetic radiation (RFEMR) exposure on spatial cognition and hippocampal architecture were investigated in prepubescent rats. Four weeks old male Wistar rats were exposed to RF-EMR (900 MHz; SAR-1.15 W/kg with peak power density of 146.60 $\mu\text{W}/\text{cm}^2$) for 1 h/day, for 28 days. Followed by this, spatial cognition was evaluated by Morris water maze test. To evaluate the hippocampal morphology; H&E staining, cresyl violet staining, and Golgi-Cox staining were performed on hippocampal sections. CA3 pyramidal neuron morphology and surviving neuron count (in CA3 region) were studied using H&E and cresyl violet stained sections. Dendritic arborization pattern of CA3 pyramidal neuron was investigated by concentric circle method. Progressive learning abilities were found to be decreased in RF-EMR exposed rats. Memory retention test performed 24 h after the last training revealed minor spatial memory deficit in RF-EMR exposed group. However, RF-EMR exposed rats exhibited poor spatial memory retention when tested 48 h after the final trial. Hirano bodies and Granulovacuolar bodies were absent in the CA3 pyramidal neurons of different groups studied. Nevertheless, RF-EMR exposure affected the viable cell count in dorsal hippocampal CA3 region. RF-EMR exposure influenced dendritic arborization pattern of both apical and basal dendritic trees in RF-EMR exposed rats. Structural changes found in the hippocampus of RF-EMR exposed rats could be one of the possible reasons for altered cognition.

Journal: Metabolic Brain Disease

Year of Publication: 2015

Publication issue: 30(5)

Page numbers: 1193-1206

SHORTLINK: bit.ly/215h6tT

Title: Antibodies directed against Shiga-toxin producing *Escherichia coli* serotype O103 type III secreted proteins block adherence of heterologous STEC serotypes to HEp-2 Cells

Author(s): Desin, T. S., Townsend, H. G. & Potter, A. A.

Affiliation: College of Science & Health Professions, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; ²⁻³ Vaccine & Infectious Disease Organization–International Vaccine Center, University of Saskatchewan, Canada.

Abstract:

Shiga toxin-producing *Escherichia coli* (STEC) serotype O103 is a zoonotic pathogen that is capable of causing hemorrhagic colitis and hemolytic uremic syndrome (HUS) in humans. The main animal reservoir for STEC is ruminants and hence reducing the levels of this pathogen in cattle could ultimately lower the risk of STEC infection in humans. During the process of infection, STEC_{O103} uses a Type III Secretion System (T3SS) to secrete effector proteins (T3SPs) that result in the formation of attaching and effacing (A/E) lesions. Vaccination of cattle with STEC serotype O157 T3SPs has previously been shown to be effective in reducing shedding of STEC_{O157} in a serotype-specific manner. In this study, we tested the ability of rabbit polyclonal sera against individual STEC_{O103} T3SPs to block adherence of the organism to HEp-2 cells. Our results demonstrate that pooled sera against EspA, EspB, EspF, NleA and Tir significantly lowered the adherence of STEC_{O103} relative to pre-immune sera. Likewise, pooled anti-STEC_{O103} sera were also able to block adherence by STEC_{O157}. Vaccination of mice with STEC_{O103} recombinant proteins induced strong IgG antibody responses against EspA, EspB, NleA and Tir but not against EspF. However, the vaccine did not affect fecal shedding of STEC_{O103} compared to the PBS vaccinated group over the duration of the experiment. Cross reactivity studies using sera against STEC_{O103} recombinant proteins revealed a high degree of cross reactivity with STEC_{O26} and STEC_{O111} proteins implying that sera against STEC_{O103} proteins could potentially provide neutralization of attachment to epithelial cells by heterologous STEC serotypes.

Journal: Plos One

Year of Publication: 2015

Publication issue: 10(10)

Page numbers:

SHORTLINK: bit.ly/28hAI3n

Title: Next generation sequencing to identify novel genetic variants causative of autosomal dominant familial hypercholesterolemia associated with increased risk of coronary heart disease

Author(s): Al-Allaf, F. A., Athar, M., Abduljaleel, Z., Taher, M. M., Khan, W. et al.

Affiliation: ¹⁻⁴Department of Medical Genetics, Faculty of Medicine, Umm Al-Qura University, Makkah, Saudi Arabia; College of Science and Health Professions, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Familial hypercholesterolemia (FH) is an autosomal dominant inherited disease characterized by elevated plasma low-density lipoprotein cholesterol (LDL-C). It is an autosomal dominant disease, caused by variants in Ldlr, ApoB or Pcsk9, which results in high levels of LDL-cholesterol (LDL-C) leading to early coronary heart disease. Sequencing whole genome for screening variants for FH are not suitable due to high cost. Hence, in this study we performed targeted customized sequencing of FH 12 genes (Ldlr, ApoB, Pcsk9, Abca1, Apoa2, Apoc3, Apon2, Arh, Ldlrap1, Apoc2, ApoE, and Lpl) that have been implicated in the homozygous phenotype of a proband pedigree to identify candidate variants by NGS Ion torrent PGM. Only three genes (Ldlr, ApoB, and Pcsk9) were found to be highly associated with FH based on the variant rate. The results showed that seven deleterious variants in Ldlr, ApoB, and Pcsk9 genes were pathological and were clinically significant based on predictions identified by SIFT and PolyPhen. Targeted customized sequencing is an efficient technique for screening variants among targeted FH genes. Final validation of seven deleterious variants conducted by capillary resulted to only one novel variant in Ldlr gene that was found in exon 14 (c.2026delG, p. Gly676fs). The variant found in Ldlr gene was a novel heterozygous variant derived from a male in the proband.

Journal: Gene

Year of Publication: 2015

Publication issue: 565(1)

Page numbers: 76-84

SHORTLINK: bit.ly/1UwAiMr

Title: New routes to prepare superabsorbent polymers free of acrylate cross-linker

Author(s): Hamed, O. A., Jaber, F., Hamed, E. M., Adwan, K. Jodeh, S., et al.

Affiliation: Department of Chemistry, An-Najah National University, Palestine; Department of Basic Sciences, College of Science and Health Professions, Jeddah, Saudi Arabia; Department of Biology, An-Najah National University, Palestine; et al.

Abstract:

In this study, new series of superabsorbent polymers, which were free of acrylate cross-linkers, were synthesized and their absorbent properties were evaluated. The new superabsorbent polymers showed high free swell and absorbency under loading. They were synthesized in a single-step process through a solution polymerization of partially neutralized acrylic acid in the presence of cross-linking agents allyl sucrose (AS) and epoxy allyl sucrose (EAS). Allyl sucrose was synthesized by reacting sucrose with allyl chloride in an alkaline medium. Allyl sucrose was then converted into EAS by oxidation with peracetic acid. The synthesis and absorbent properties of superabsorbent polymers (SAPs) cross-linked with commercially available non-sucrose-based epoxy cross-linking agents, e.g., glycerol diglycidyl ethers (GDGE), 1,4-butanediol diglycidyl ether (1,4-BDGE) and 1,4-cyclohexanedimethanol diglycidyl ether (1,4-CHDDMDGE) have been evaluated, as well. Absorbent properties of the prepared superabsorbent polymers were evaluated in saline solution and results showed high dependency of the absorbent properties on the cross-linking agent polarity and concentration. Superabsorbent polymers cross-linked with EAS and GDGE showed the highest absorbency under loading and indicated that they formed gels with high strength in the aqueous solution. Absorbent properties of the prepared SAPs showed reversible correlation with cross-linking agent concentration. The pH of the reaction mixture was optimized to achieve the highest free swell and absorbency under loading. The biodegradation properties of the superabsorbent polymers cross-linked with sucrose-based cross-linking agents were also evaluated and they showed degradation behavior under the influence of organisms *Pseudomonas aeruginosa* and *Trichophyton rubrum*.

Journal: Iranian Polymer Journal

Year of Publication: 2015

Publication issue: 24(10)

Page numbers: 849-859

SHORTLINK: bit.ly/22M7XrN

Title: Burnout Among Otolaryngology Residents in Saudi Arabia: A Multicenter Study

Author(s): Aldrees, T., Badri, M., Islam, T. & Algatani, K.

Affiliation: Prince Sattam Bin Abdulaziz University, Riyadh, Saudi Arabia; College of Sciences and Health Professions, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; College of Medicine and Research Center, King Saud University, Riyadh, Saudi Arabia; College of Medicine, King Saud University, Riyadh, Saudi Arabia.

Abstract:

OBJECTIVE: Determine the prevalence of, and associated risk factors for, burnout among otolaryngologist residents in Saudi Arabia.

DESIGN AND SETTING: A cross-section study of multicenter hospitals in Saudi Arabia conducted in March 2013.

PARTICIPANTS: Registered residents in Saudi Otolaryngology Board Program.

MAIN OUTCOMES MEASURES: The Maslach Burnout Inventory was used to measure burnout status. Questions supplementary to the Maslach Burnout Inventory were also included to identify associated potential risk factors such as demographic data, resident satisfaction, and work conditions.

RESULTS: Of the initial 123 questionnaires that were distributed, 85 yielded responses, a rate of 69%. The mean age (standard deviation [SD]) of respondents was 29 (2.3) years. Of those, 67% (57/85) were men and 66% (55/85) were married. Resident levels were delineated: level 2, 19%; level 3, 33%; level 4, 29%; and level 5, 19%. The mean number of on-call days/month (SD) was 7 (2), clinics/week (SD) was 3 (1), sleep hours/day (SD) was 6 (1), and operations/week (SD) was 2 (1). The mean emotional exhaustion (EE) and depersonalization scores were high at 29.5 (SD = 9.6) and 10.7 (SD = 6), respectively. The mean personal accomplishment was low at 32.33 (SD = 6). The mean of all subscales did not differ by sex (EE $p = 0.5$; depersonalization $p = 0.09$; personal accomplishment $p = 0.4$). Mean EE differed by marital status, which was 31.2, 31.3, and 25.6 for married, divorced, and single, respectively, analysis of variance test $p = 0.045$.

CONCLUSION: Burnout prevalence was found to be high among otolaryngologist residents in Saudi Arabia. The associated variables examined in this study should be addressed to decrease this level of burnout and provide residents with a less stressful work environment.

Journal: Journal of Surgical Education

Year of Publication: 2015

Publication issue: 72(5)

Page numbers: 844-848

SHORTLINK: bit.ly/1YcGkb0

Title: Sequence variants on 17q21 are associated with the susceptibility of asthma in the population of Lahore, Pakistan

Author(s): Shahid, M., Sabar, M. F., Bano, I., Rahman, Z. & Iqbal, Z.

Affiliation: ¹⁻² Ministry of Science and Technology, Lahore, Pakistan; The Children's Hospital & The Institute of Child Health, Lahore, Pakistan; University of the Punjab, Lahore, Pakistan; College of Applied Medical Sciences, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Objective: Single nucleotide polymorphisms (SNPs) on 17q21 are known to be associated with asthma disease in multiple populations. This study was designed to know whether this region is associated with asthma in Lahore region population or not. **Methods:** A total of 200 asthma patients and 100 healthy controls were enrolled from different hospitals of Lahore, Pakistan. Twelve SNPs from chromosomal region 17q21 were analyzed in cases and controls by single base extension method and capillary-based genetic analyzers. Associations with asthma were checked using basic allelic model, genotypic model, and results were adjusted by logistic regression analysis using PLINK v1.9. Pair-wise linkage disequilibrium among the SNPs was analyzed by using Haploview software. **Results:** SNP rs3816470 showed a strong association ($p = 8.89 \times 10^{-5}$, Odd Ratio = 3.082 [1.755-5.41]) with asthma, whereas rs3859192 and rs6503525 also showed a significant association with the development of asthma, especially in the case of positive family history. In LD block1 (93 kb) consisting of six SNPs (rs12936231, rs7216389, rs7216558, rs9894164, rs1007654 and rs7212938), none of the haplotypes show any significant association with asthma except the haplotype "CCTCAG", which is a significant protective factor against asthma having frequency 0.051 in controls while 0.017 in cases ($p = 3.56 \times 10^{-2}$, $\chi^2 = 4.415$). **Conclusion:** The present study reports that the polymorphic genomic variant rs3816470 is significantly and independently associated with asthma in the studied population, while the variants, rs6503525 and rs3859192, also indicate a significant association with asthma in this population when family history of the disease is taken as a covariate.

Journal: Annals of Thoracic Medicine

Year of publication: 2015

Volume: 10(1)

Page numbers: 3-15

SHORTLINK: bit.ly/25KeiZU

Title: Determination of cefdinir in human plasma using HPLC coupled with tandem mass spectroscopy: Application to bioequivalence studies

Author(s): Tutunji, L. F., Al Bayyari, M., Shilbayeh, S. & Tutunji, M. F.

Affiliation: Faculty of Pharmacy, The University of Jordan, Jordan, College of Science and Health Professions, King Saud Bin Abdulaziz University for Health Sciences, Jeddah, KSA; Faculty of Pharmacy, Princesses Noura University Riyadh, Saudi Arabia; Clinicalquest Clinical Research Services, Amman, Jordan.

Abstract:

A sensitive and selective liquid chromatographic method coupled with tandem mass spectrometry has been developed and validated for the determination of cefdinir in human plasma. The analytes cefdinir and cephalixin (internal standard) were separated on a reversed phase column (Merck, Purospher RP-C18, 30 X 4.6 (mm), 3 μ m) using a mobile phase consisting of an aqueous solution of formic acid in water (0.10 %) and acetonitrile (85: 15 v/v (%)), flow rate 0.50 (mL/min.). Detection utilized a tandem MS/MS, the analytes were ionized using an ESI source in the positive ion mode prior to detection and analysis using Multiple Reaction Monitoring mode (MRM). The analytes were monitored at the following transitions (m/z) 396.10 226.90, and (m/z) 348.24 158.10 for cefdinir and cephalixin respectively. Cefdinir linearity was demonstrated over the concentrations ranging from 10 to 1200 (ng/ mL). The developed method was fully validated prior to its application on a bioequivalence study involving cefdinir (125 mg/5 ml) suspension in healthy volunteers (N= 26) under fasting conditions.

Journal: Jordan Journal of Pharmaceutical Sciences

Year of Publication: 2015

Publication issue: 8(2)

Page numbers: 123-139

SHORTLINK: bit.ly/1Y62fQH

Title: Evaluating Saudi University Students' Beliefs about Learning

Author(s): Al-Roomy, M.

Affiliation: King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

In this study, beliefs held by Saudi university medical students toward English and how it should be learnt will be elucidated through an experimental study. There is evidence that students bring their previous beliefs, experiences, learning strategies and attitudes to the classroom which are the main drivers for the actions that students perform to learn (Breen, 2001). It has been highlighted that students' beliefs is important, influencing their learning performance, motivation and learning strategies (Lowie et al., 2009; Horwitz, 1985). Results revealed that students reported more positive beliefs with reference to motivation and expectation statement, more negative beliefs with regard to learning and communication strategies and more uncertain responses to foreign language aptitude. Finally, the findings offered several pedagogical implications and recommendations for further research, especially at the university level.

Journal: English International Journal of English Linguistics

Year of Publication: 2015

Publication issue: 5(1)

Page numbers: 22-31

SHORTLINK: bit.ly/1UwzVRV

Title: The fucose containing polymer (FCP) rich fraction of *Ascophyllum nodosum* (L.) Le Jol. protects *Caenorhabditis elegans* against *Pseudomonas aeruginosa* by triggering innate immune signaling pathways and suppression of pathogen virulence factors

Author(s): Kandasamy, S., Khan, W., Kulshreshtha, G., Evans, F., Critchley, A. T. et al.

Affiliation: Faculty of Agriculture, Dalhousie University, Canada; College of Science and Health Professions, King Saud Bin Abdul Aziz University for Health Sciences, Riyadh, Saudi Arabia; Acadian Seaplants Limited, Dartmouth, Canada; et al.

Abstract:

Brown algal extracts have long been used as feed supplements to promote health of farm animals. Here, we show new molecular insights in to the mechanism of action of a fucose containing polymer (FCP) rich fraction from the brown seaweed *Ascophyllum nodosum* using the *Caenorhabditis elegans*-*Pseudomonas aeruginosa* PA14 infection model. FCP enhanced survival of *C. elegans* against pathogen stress, correlated with up-regulation of key immune response genes such as: lipases, lysozyme (*lys-1*), saponin-like protein (*spp-1*), thaumatin-like protein (*tlp-1*), matridin SK domain protein (*msk-1*), antibacterial protein (*abf-1*), and lectin family protein (*lfp*). Further, FCP caused down regulation of *P. aeruginosa* quorum sensing genes: (*lasI*, *lasR*, *rhlI*, and *rhlR*), secreted virulence factors (lipase, proteases, and elastases) and toxic metabolites (pyocyanin, hydrogen cyanide, and siderophore). Biofilm formation and motility of pathogenic bacteria were also greatly attenuated when the culture media were treated with FCP. Interestingly, FCP failed to mitigate the pathogen stress in *skn-1*, *daf-2*, and *pmk-1* mutants of *C. elegans*. This indicated that, FCP treatment acted on the regulation of fundamental innate immune pathways, which are conserved across the majority of organisms including humans. This study suggests the possible use of FCP, a seaweed component, as a functional food source for healthy living.

Journal: Algae

Year of Publication: 2015

Publication issue: 30(2)

Page numbers: 147-161

SHORTLINK: bit.ly/1UnAFco

Title: The radioactivity of seasonal dust storms in the Middle East: the May 2012 case study in Jordan

Author(s): Hamadneh, H. S., Ababneh, Z. Q., Hamasha, K. M. & Abaneh, A. M.

Affiliation: Faculty of Science, Yarmouk University, Irbid, Jordan; Physics Dept., Faculty of Science, Islamic University, Al-Madinah, Saudi Arabia; College of Science and Health Professions, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Dust storms in the Middle East are common during spring. Some of these storms are massive and carry a large amount of dust from faraway regions, which pose health and pollution risks. The huge dust storm event occurred in early May, 2012 was investigated for its radioactive content using gamma ray spectroscopy. Dust samples were collected from Northern Jordan and it was found that the storm carried a large amount of both artificial and natural radioactivity. The average activity concentration of fallout ^{137}Cs was 17.0 Bq/kg which is larger than that found in soil (2.3 Bq/kg), and this enrichment is attributed to particle size effects. ^7Be which is of atmospheric origin and has a relatively short half-life, was detected in dust with relatively large activity concentrations, as it would be expected, with an average of 2860 Bq/kg, but it was not detected in soil. Despite the large activity concentration of ^7Be , dose assessment showed that it does not contribute significantly to the effective dose through inhalation. The concentrations of the primordial nuclides ^{40}K , ^{232}Th and ^{238}U were 547, 30.0 and 49.3 Bq/kg, respectively. With the exception of ^{40}K , these were comparable to what was found in soil.

Journal: Journal of Environmental Radioactivity

Year of Publication: 2015

Publication issue: 140

Page numbers: 65-69

SHORTLINK: bit.ly/1UccDFe

Title: Pharmacophore modeling and molecular docking studies of acridines as potential DPP-IV inhibitors

Author(s): Abu Khalaf, R., Jarekji, Z., Al-Qirim, T., Sabbah, D. & Shattat, G.

Affiliation: ¹⁻⁴ Department of Pharmacy, Faculty of Pharmacy, Al-Zaytoonah University of Jordan, Amman, Jordan; College of Science and Health Professions, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Inhibition of dipeptidyl peptidase-IV (DPP-IV) prevents the inactivation of gastric inhibitory polypeptide (GIP) and glucagon like peptide-1 (GLP-1). This increases circulating levels of active GLP-1 and GIP, stimulates insulin secretion, which results in lowering of glucose levels and improvement of the glycemic control in patients with type 2 diabetes. In this study, pharmacophore modeling and docking experiments were carried out and a series of 8 novel 2-ethoxy-6, 9-disubstituted acridines (**13**, **15**, **17a-17f**) have been designed and synthesized. Then these compounds were evaluated for their ability to inhibit DPP-IV. Most of the synthesized compounds were proved to have anti-DPP-IV activity where compound **17b** displayed the best activity of 43.8 % inhibition at 30 μ M concentration. Results of this work might be helpful for further optimization to develop more potent DPP-IV inhibitors.

Journal: Canadian Journal of Chemistry

Year of Publication: 2015

Publication issue: 93(7)

Page numbers: 721-729

SHORTLINK: bit.ly/1ZuxiED

Title: Synthesis and Preliminary Biological Evaluation of New Heterocyclic Carboxamide Models

Author(s): Sweidan, K., Engelmann, J., Rayyan, W. A., Sabbah, D ... Shattat, G. et al.

Affiliation: ^{1,4} University of Jordan, Jordan; Max Planck Institute for Biological Cybernetics, Tübingen, Germany; Al-Zaytoonah University of Jordan, Jordan; College of Science and Health Professions, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

The heterocyclic system is a promising core nucleus in many bioactive compounds. This work describes our effort to synthesize and characterize a set of new biphenyl, benzofuran and benzothiophene carboxamide derivatives. Our biological studies showed that compounds 10 and 17 have antifungal activity against *C. galabrata* more potent than fluconazole compounds 9, 10, and 17 exerted cytotoxic activities in immortalized embryonic mouse fibroblast cells (3T3) and a human cervical cancer cell line (HeLa); in particular, the cyclic amidine derivative 17 showed selective toxicity against HeLa. This study showed that the tested compounds have the potential to be useful as antitumor drugs after further optimization.

Journal: Letters in Drug Design & Discovery

Year of Publication: 2015

Publication issue: 12(5)

Page numbers: 417-429

SHORTLINK: bit.ly/24w5ZuR

Title: A 23 years audit of packed red blood cell consumption in a university hospital in a developing country

Author(s): Gader, A., AlGhumlas, A. K., Al Momen, A. K. & Badri, M.

Affiliation: The Blood Bank, King Khalid University Hospital, King Saud University, Riyadh, Saudi Arabia; The Blood Bank, King Khalid University Hospital, King Saud University, Riyadh, Saudi Arabia; Department of Statistics, College of Sciences and Health Professions, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

BACKGROUND: There is paucity of information on the blood transfusion practice in developing countries. The current audit aims to find out the long term trend in the consumption of packed red blood cells (PRBCs) in a large Saudi teaching hospital in Riyadh.

MATERIALS AND METHODS: We analyzed the annual consumption of PRBCs from 1985 to 2007 in seven major hospital divisions (Medicine, General Surgery, Pediatrics, Obstetrics and Gynecology, Cardiac Surgery, Accident and Emergency and Renal Dialysis Unit) at the 850-bed King Khalid University Hospital (KKUH), Riyadh.

RESULTS: Grand total consumption of PRBCs was 345,642 units. The consumption increased gradually and peaked in the year 1994, dropped to 30.4% 6 years later and then increased gradually thereafter, due to the expansion in the number of patients cared for in the Departments of Medicine, Cardiac Surgery and Accident and Emergency, while in the Department of Pediatrics the drop in consumption continued unabated. In the Renal Dialysis Unit consumption was minimal with the use of erythropoietin therapy. The crossmatch: transfusion ratio uncovered gross over-ordering of PRBCs and wastage of blood bank resources in most hospital divisions most notably in the Department of Obstetrics and Gynecology.

CONCLUSION: The results obtained indicate clearly that there has been overuse of blood products that dropped markedly in years coinciding with the worldwide apprehension about the safety of transfusion therapy particularly HIV transmission. This factor in addition to the current implementation of strict guidelines is gradually improving transfusion practices in our institute.

Journal: Transfusion and Apheresis Science

Year of Publication: 2015

Publication issue: 53(3)

Page numbers: 300-307

SHORTLINK: bit.ly/1PDMkaX

Title: Novel Pyrrole Derivatives as Potent lipid-Lowering Agents in Triton-WR-1339-Induced Hyperlipidemic Rats

Author(s): Shattat, G. F., Abuskeika, G. M., Al-Qirim, T. M., Huwaitat, R., El-Huneidi, W., et al.

Affiliation: College of Science and Health Professions, King Saud Bin Abdulaziz University for Health Sciences, Riyadh. Saudi Arabia; Faculty of Pharmacy, Al-Zaytoonah University of Jordan, Jordan; et al.

Abstract:

Hyperlipidemia is nowadays one of the main risk factors for cardiovascular diseases. Therefore, synthesis of new compounds with potential lowering effect on blood lipid profiles became a major concern for many researchers. In this study, we were able to synthesize, characterize and validate new series of novel pyrrole derivatives and evaluate their potency as lipid-lowering agents on animal model. Hyperlipidemia was induced in rats using Triton WR-1339 (Tyloxapol). After 18 h and at a dose of 15 mg/kg body weight, C5, C7 and bezafibrate (100 mg/kg) significantly ($p < 0.0001$) reduced the elevated plasma TG as well as that of plasma total cholesterol and LDL levels compared to the hyperlipidemic control group. Promisingly, C5 and C7 were also able to increase HDL level compared to the hyperlipidemic control group. These results insights potential hypolipidemic effects which consequently may contribute as protective agents against atherosclerosis and cardiovascular diseases.

Journal: Latin American Journal of Pharmacy

Year of Publication: 2015

Publication issue: 34(6)

Page numbers: 1258-1264

SHORTLINK: bit.ly/215igpq

Title: Performance of NiTi endodontic instrument under different temperatures

Author(s): Jamleh, A., Yahata, Y., Ebihara, A., Atmeh, A. R., Bakhsh, T., et al.

Affiliation: College of Dentistry, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Showa University School of Dentistry, Japan; Tokyo Medical and Dental University, Tokyo, Japan; Jordan University of Science and Technology, Jordan; et al.

Abstract:

The purpose of this study was to test nickel titanium (NiTi) instrument performance under different surrounding temperatures. Twenty-four superelastic NiTi instruments with a conical shape comprising a 0.30-mm-diameter tip and 0.06 taper were equally divided into 3 groups according to the temperature employed. Using a specially designed cyclic fatigue testing apparatus, each instrument was deflected to give a curvature 10 mm in radius and a 30° angle. This position was kept as the instrument was immersed in a continuous flow of water under a temperature of 10, 37, or 50 °C for 20 s to calculate the deflecting load (DL). In the same position, the instrument was then allowed to rotate at 300 rpm to fracture, and the working time was converted to the number of cycles to fracture (NCF). The statistical significance was set at $p = 0.05$. The mean DL (in N) and NCF (in cycles) of the groups at 10, 37, and 50 °C were 10.16 ± 1.36 and 135.50 ± 31.48 , 13.50 ± 0.92 and 89.20 ± 16.44 , and 14.70 ± 1.21 and 65.50 ± 15.90 , respectively. The group at 10 °C had significantly the lowest DL that favorably resulted in the highest NCF. Within the limitations of this study, the surrounding temperature influences the cyclic fatigue resistance and DL of the superelastic NiTi instruments. Lower temperatures are found to favorably decrease the DL and extend the lifetime of the superelastic NiTi instrument. Further NiTi instrument failure studies should be performed under simulated body temperature.

Journal: Odontology

Year of Publication: 2015

Publication issue: 48(12)

Page numbers: 1103-1111

SHORTLINK: bit.ly/1XAv21j

Title: Intra-operative application of chlorhexidine gel reduces bacterial counts in internal implant cavity

Author(s): Ghannad, F., Alkadi, L. T., Wiebe, C. B., Shen, Y., Haapasalo, M., et al.

Affiliation: ^{1,3-5} Faculty of Dentistry, University of British Columbia, Vancouver, BC, Canada; Department of Dentistry, College of Dentistry, King Saud bin Abdulaziz University for Health Sciences, King Abdulaziz Medical City, Riyadh, Saudi Arabia.

Abstract:

A prospective clinical trial was conducted to assess the bacterial-inhibitory potential of 1% chlorhexidine (CHX) gel in the internal cavity of implant screw holes, when utilized at the time of implant placement. A total of 40 Straumann (S) and Nobel Biocare (N) implants were divided into test (ST or NT; implant + CHX gel) and control (SC or NC; implant only) groups. Total numbers of colony-forming units (CFUs ml⁻¹) were assessed at a minimum of 3 months postsurgery by aerobic and anaerobic culture. A set of specimens was stained with Gram stain. The mean sample-collection time was 110 d for the test population and 98 d for the controls. The use of 1% CHX gel significantly reduced bacterial counts in both the ST and NT samples by over three logs compared with controls. No statistical differences in the numbers of CFUs ml⁻¹ were evident between aerobic and anaerobic cultures. Differences in the numbers of CFUs ml⁻¹ between ST and NT groups were not statistically significant. Microscopic analysis showed mainly Gram-positive coccoid species in most samples.

Journal: European Journal of Oral Sciences

Year of Publication: 2015

Publication issue: 123(6)

Page numbers: 425-431

SHORTLINK: bit.ly/1WDaq82

Title: Is arch form influenced by sagittal molar relationship or Bolton tooth-size discrepancy?

Author(s): Aldrees, A. M., Al-Shujaa, A. M., Algahtani, M. A. & Aljani, A. S.

Affiliation: College of Dentistry, King Saud University, Riyadh, Saudi Arabia; Department of Dentistry, King Fahad Medical City, Riyadh, Saudi Arabia; School of Dental Medicine, State University of New York, USA; College of Dentistry, King Saud bin Abdulaziz University For Health Sciences, Riyadh, Saudi Arabia.

Abstract:

BACKGROUND: Orthodontic patients show high prevalence of tooth-size discrepancy. This study investigates the possible association between arch form, clinically significant tooth-size discrepancy, and sagittal molar relationship.

METHODS: Pretreatment orthodontic casts of 230 Saudi patients were classified into one of three arch form types (tapered, ovoid, and square) using digitally scanned images of the mandibular arches. Bolton ratio was calculated, sagittal molar relationship was defined according to Angle classification, and correlations were analyzed using ANOVA, chi-square, and t-tests.

RESULTS: No single arch form was significantly more common than the others. Furthermore, no association was observed between the presence of significant Bolton discrepancy and the sagittal molar relationship or arch form. Overall Bolton discrepancy is significantly more prevalent in males.

CONCLUSIONS: Arch form in a Saudi patient group is independent of gender, sagittal molar relationship, and Bolton discrepancy.

Journal: BMC Oral Health

Year of Publication: 2015

Publication issue: 15

Page numbers:

SHORTLINK: bit.ly/1TTpqZI

Title: Orthodontic treatment and referral patterns: A survey of pediatric dentists, general practitioners, and orthodontists

Author(s): Aldrees, A. M., Tashkandi, N. E., Alwanis, A. A., AlSanouni, M. S. & Al-Hamlan, N. H.

Affiliation: College of Dentistry, King Saud University, Riyadh, Saudi Arabia; ²⁻⁴ College of Dentistry, King Saud University, Riyadh, Saudi Arabia; King Saud bin Abdulaziz University for Health Science, Riyadh, Saudi Arabia.

Abstract:

Objective: This study aims to assess the orthodontic diagnostic skills, referral patterns, and the perceptions of orthodontic benefits of pediatric and general dentists in comparison with orthodontists.

Materials and methods: Two online surveys were e-mailed to pediatric dentists, general dentistry practitioners, and orthodontists registered as members of the Saudi Dental Society and the Saudi Orthodontic Society. The surveys included questions about the type of orthodontic treatment provided, referral trends, and timing; presumed benefits associated with successful orthodontic treatment; and diagnosis and treatment plans of seven cases representing different malocclusions.

Results: In total, 25 orthodontists, 18 pediatric dentists, and 14 general practitioners completed the survey. Only 38.8% of pediatric dentists and 7.1% of general practitioners reported that they practiced orthodontics clinically. The perceptions of the three groups toward the benefits of orthodontic treatment were comparable in the psychosocial areas. However, the orthodontists perceived significantly lesser effects of orthodontic treatment on the amelioration of temporomandibular disorder (TMD) symptoms. Pediatric dentists tended to rate the need and urgency of treatment higher, while general practitioners tended to rate the need of treatment lower. The selected treatment plans for three early malocclusion cases showed the greatest discrepancies between the orthodontists and the other two groups.

Journal: Saudi Dental Journal

Year of Publication: 2015

Publication issue: 27(1)

Page numbers: 30-39

SHORTLINK: bit.ly/1UcdFkv

Title: A clinical investigation of the relationship between the quality of conventional complete dentures and the patients' quality of life

Author(s): Alfadda, S. A., Al-Fallaj, H. A.; Al-Banyan, H. A. & Al-Khadi, R. M.

Affiliation: College of Dentistry, King Saud University, Riyadh, Saudi Arabia; Department of Prosthetic Dental Sciences, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; College of Dentistry, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Objective: The purpose of this study was to determine whether there is a correlation between the clinical quality of conventional complete dentures and patient quality of life. **Materials and methods:** This study included a random sample of 32 completely edentulous patients (15 males and 17 females) who were treated with conventional complete dentures. Using a validated questionnaire, three investigators evaluated the dentures independently on the basis of seven clinical parameters: esthetics (lip support and lower lip line), retention and stability of the maxillary and the mandibular dentures, and occlusion. Patients completed the validated Oral Health Impact Profile-20 (OHIP-20) questionnaire. Correlations were determined by using the point-biserial correlation coefficient. **Results:** Clinicians rated the overall clinical quality of the dentures satisfactory in 80.3% of patients. The mean (}standard deviation) total OHIP-20 score was 56.3 } 15.9 out of a possible 120 maximum. A statistically significant negative correlation was found between the stability of the maxillary and mandibular dentures and the total OHIP-20 score ($p= 0.009$ and 0.0023 , respectively). A negative correlation between the total OHIP-20 score and the retention of the mandibular denture approached significance ($p= 0.092$). Esthetics, retention of the maxillary denture, and occlusion were not correlated with patient quality of life ($p> 0.169$).

Journal: Saudi Dental Journal

Year of Publication: 2015

Publication issue: 27(2)

Page numbers: 93-98

SHORTLINK: bit.ly/28hCgdP

Title: Marginal adaptation of mineral trioxide aggregate (MTA) to root dentin surface with orthograde/retrograde application techniques: A microcomputed tomographic analysis

Author(s): Fouzan, K. A., Awadh, V., Badwelan, M., Gamal, B., Geevarghese, A., et al.

Affiliation: ¹⁻⁵ College of Dentistry, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Background: Achieving a good apical seal for root canals is known to be associated with good mineral trioxide aggregate (MTA) adaptation to dentin.

Aims: This study aims to compare the marginal adaptation of MTA with root dentin between orthograde and retrograde application techniques using microcomputed tomography (micro-CT) analysis.

Settings and Design: Fifty-two single-rooted human teeth were divided into four equal groups: (Group 1) Retrograde MTA (RMTA), (Group 2) Orthograde MTA (OMTA), (Group 3) Etched RMTA (ERMTA), and (Group 4) Etched OMTA (EOMTA).

Materials and Methods: For Group 1, 3-mm retrograde cavities were prepared and filled with MTA. For Group 2, the apical 6 mm of the canals were filled with MTA and sealed with sealer cement and warm gutta-percha. In Groups 3 and 4, canals were treated the same as Groups 1 and 2, respectively, except that before placing the MTA, canals were irrigated with 17% ethylenediaminetetraacetic acid (EDTA). After 48 hours, all the teeth were analyzed using a micro-CT scanner.

Statistical Analysis: Mean dentin-MTA contact and the mean length and width of each gap was analysed using one-way analysis of variance (ANOVA). Statistical significance was set at an α level of 5%.

Results: No significant difference in gap volumes was observed in the dentin-MTA adaptation in both orthograde and retrograde application techniques. However, significant difference in the gap volumes was observed between RMTA and ERMTA ($P = 0.045$). Etching significantly improved the MTA-Dentin adaptation ($P < 0.05$). The type of application technique did not significantly improve the dentin-MTA adaptation, instead with the use of 17% EDTA, a significant improvement could be achieved.

Conclusion: Within the limitations of the present study, it concludes that MTA adaptation to dentin tooth structure is not significantly different between an orthograde and retrograde approach. However, the use of EDTA significantly improved the MTA-Dentin adaptation.

Journal: Journal of Conservative Dentistry

Year of Publication: 2015

Publication issue: 18(2)

Page numbers: 109-113

SHORTLINK: bit.ly/1UDt1gH

Title: Root surface strain during canal shaping and its influence on apical microcrack development: a preliminary investigation

Author(s): Jamleh, A., Komabayashi, T., Ebihara, A., Nassar, M., Wantanabe, S., et al.

Affiliation: Endodontics, College of Dentistry, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Endodontics, School of Dentistry, West Virginia University, USA; Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University, Japan; et al.

Abstract:

AIM: To determine the root surface strain (RSS) generated during root canal shaping and its effects on apical microcrack development.

METHODOLOGY: Twenty-five extracted human mandibular premolars were selected and decoronated. The teeth were instrumented with either the ProTaper (PT) or WaveOne (WO) (Dentsply Maillefer) NiTi rotary systems (n = 10 per group) or used as controls (n = 5). Instrumented root canals were enlarged to ProTaper F4 (size 40, 0.06 taper) or using WaveOne LARGE (size 40, 0.08 taper) instruments according to the manufacturer's instructions. An electrical strain gage (KFG02-120-C1-16, Kyowa Dengyo, Tokyo, Japan) was fixed on the proximal root surface and connected to a strain amplifier via a bridge box in order to measure RSS. During canal shaping, the strain output of the amplifier was recorded. The instantaneous RSS induced by each instrument and the maximum RSSs were determined. All teeth were then stained with contrast media and imaged with micro-computed tomography (micro-CT) at an isotropic resolution of 10 μm to detect microcracks. The mean maximum RSS values (microstrain) and mean number of microcracks recorded for both groups were tested for statistical significance using Mann-Whitney U-test. Presence/absence of microcracks in both groups was compared by chi-square tests.

RESULTS: Increased baseline RSS from strain accumulation during canal shaping was observed, with similar maximum RSS (mean \pm SD) for PT (416.6 ± 185.1 μstrain) and WO (398.2 ± 163.8 μstrain) ($P = 0.94$). The interevaluator reliability for microcrack detection using micro-CT had a kappa value of 0.998. Compared to the PT group, there was a trend for fewer samples with microcracks in the WO group ($P = 0.051$). On the micro-CT images, apical microcracks were detected in 20 PT and 11 WO samples ($P = 0.10$). The microcracks were observed in the buccolingual direction in all WO and 81% of PT samples. No vertical root fractures were found. The maximum RSS obtained during canal shaping was poorly correlated with the number of microcracks found ($R(2) = 0.093$).

CONCLUSIONS: Based on these preliminary data, canal shaping appears to cause apical microcracks regardless of the type of rotary instrument motion. Contrast-enhanced micro-CT was able to identify microcracks in roots.

Journal: International Endodontic Journal

Year of Publication: 2015

Publication issue: 48(12)

Page numbers: 1103-1111

SHORTLINK: bit.ly/1WDbxV8

Title: Susceptibility of restorations and adjacent enamel/dentine to erosion under different salivary flow conditions

Author(s): Alghilan, M. A., Cook, N. B., Platt, J. A., Eckert, G. J. & Hara, A. T.

Affiliation: ^{1,3,5} Operative Dentistry and Dental Public Health, Indiana University School of Dentistry, Indianapolis, USA; Department of Restorative Dental Science, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Department of Biostatistics, Indiana University School of Medicine, Indianapolis, USA.

Abstract:

OBJECTIVES: The aim of this study was to investigate the effect of erosion on direct tooth-coloured restorations and adjacent enamel/dentine under low and normal simulated salivary flow rates.

METHODS: Bovine enamel and dentine specimens were prepared (n=16) and restored with the following materials: resin composite (FiltekZ250), resin-modified glass ionomer cement (Fuji II LC), high-viscosity glass ionomer cement (Fuji IX), and conventional glass ionomer cement (Fuji II). They were submitted to in vitro erosion-remineralisation cycling simulating normal (0.5ml/min) and low (0.05ml/min) salivary flow rates, for 5 days. The restorative material, enamel and dentine substrates were assessed with optical profilometry for surface loss. Mixed-model ANOVAs were used for statistical comparisons ($\alpha=0.05$).

RESULTS: Low-salivary flow significantly increased surface loss for all tested substrates ($p<0.05$), except FiltekZ250. Surface loss (mean \pm SD, in micrometres) under low-salivary flow was significantly higher in enamel (19.75 \pm 4.27) and dentine (23.08 \pm 3.48) adjacent to FiltekZ250 compared to Fuji II LC (16.33 \pm 2.30 and 20.47 \pm 2.58, respectively) and Fuji IX (15.79 \pm 2.41 and 20.63 \pm 2.34, respectively). Restoration surface degradation was significantly lower for Fuji II LC (2.17 \pm 0.73) than for both Fuji II (13.03 \pm 6.79), and Fuji IX (16.74 \pm 7.72) under low-salivary flow condition; whereas FiltekZ250 exhibited no meaningful surface loss (-0.35 \pm 0.19).

CONCLUSION: Limited to these in vitro conditions, low-salivary flow promoted higher erosive conditions for teeth and restorations. Some fluoride-containing restorative materials may reduce erosive wear on adjacent enamel and dentine. FiltekZ250 resisted erosive surface loss. Fuji II LC showed both reduced acid degradation and protection of adjacent dental surfaces to erosion.

CLINICAL SIGNIFICANCE: Patients at risk for erosion and in need of restorations may benefit from fluoride-containing restorative materials that resist erosive degradation. The data of this study suggest that resin-modified glass ionomer may be a suitable restoration for patients at higher risk of erosion with low exposure to fluoride.

Journal: Journal of Dentistry

Year of Publication: 2015

Publication issue: 43(12)

Page numbers: 1476-1482

SHORTLINK: bit.ly/1rbrPqi

Title: Effects of myrrh on the strength of suture materials: an in vitro study

Author(s): Alshehri, M. A., Baskaradoss, J. K., Geevarghese, A., Ramakrishnaiah, R. & Tatakis, D. N.

Affiliation: King Saud University, Riyadh, Saudi Arabia; School of Dental Medicine, Case Western Reserve University, USA; College of Dentistry, King Saud Bin Abdulaziz University for Health Sciences, King Abdulaziz Medical City, Riyadh, Saudi Arabia; College of Applied Medical Sciences, King Saud University, Riyadh, Saudi Arabia; Ohio State University, Ohio, USA.

Abstract:

The present in vitro study sought to determine the effects of myrrh-containing solutions on common suture materials used in periodontal surgery. Three commonly used suture materials (silk, polyglactin 910, polytetrafluoroethylene) were immersed in four thermostatically controlled experimental media to simulate daily oral rinsing activity, namely -artificial saliva, normal saline solution with 0.2% Commiphora myrrh, full-concentration (100%) Commiphora myrrh oil, and a myrrh-containing commercial mouthwash. Tensile strength was measured at the end of each day using an Instron tensile testing machine. Silk sutures were susceptible to tensile strength loss when exposed to 0.2% myrrh solution once daily for 5 days. Myrrh-containing commercial mouthwash had no effect on tensile strength, but all three suture materials lost tensile strength when exposed to 100% myrrh oil. For patients that routinely use myrrh mouthwashes postoperatively, findings of this study suggested that silk sutures might not be the optimal material choice.

Journal: Dental Materials Journal

Year of Publication: 2015

Publication issue: 34(2)

Page numbers: 148-153

SHORTLINK: bit.ly/1U5PoLH

Title: Factors associated with diabetes mellitus prediction among pregnant Arab subjects with gestational diabetes

Author(s): Aljohani, N., Al Serehi, A., Ahmed, A. M., Buhary, B. A. M., Alzahrani, S. et al.

Affiliation: ^{1-3,4,5} Faculty of Medicine, King Saud bin Abdul-Aziz University for Health Sciences, Riyadh, Saudi Arabia; Department of Maternal-Fetal Medicine, King Fahd Medical, Riyadh, Saudi Arabia; et al.

Abstract:

There is scarcity of available information on the possible significant risk factors related to diabetes mellitus (DM) prediction among expectant Saudi mothers with gestational diabetes mellitus (GDM). The present study is the first to identify such risk factors in the Arab cohort. A total of 300 pregnant subjects (mean age 33.45 ± 6.5 years) were randomly selected from all the deliveries registered at the Obstetrics Department of King Fahad Medical City, Riyadh Saudi Arabia from April 2011 to March 2013. Demographic and baseline glyceimic information were collected. A total of 7 highly significant and independent risk factors were identified: age, obesity, and family history of DM, GDM < 20 weeks, macrosomia, insulin therapy and recurrent GDM. Among these factors, subjects who had insulin therapy use are 5 times more likely to develop DMT2 (p-value 3.94×10^{-14}) followed by recurrent GDM [odds-ratio 4.69 (Confidence Interval 2.34-4.84); P = 1.24×10^{-13}]. The identification of the risk factors mentioned with their respective predictive powers in the detection of DMT2 needs to be taken seriously in the post-partum assessment of Saudi pregnant patients at highest risk.

Journal: International Journal of Clinical and Experimental Pathology

Year of Publication: 2015

Publication issue: 8(7)

Page numbers: 8512-8515

SHORTLINK: bit.ly/1VK1KLY

Title: Physicians' knowledge and practice towards medical error reporting: a cross-sectional hospital-based study in Saudi Arabia

Author(s): Alsafi, E., Baharoon, S. Ahmed, A., Al-Jahdali, H. H., Al Zahrani, S. et al.

Affiliation: Department of Quality Management, King Saud Chest Specialty Hospital, Riyadh, Saudi Arabia; Department of Medicine, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Al-Iman General Hospital, Riyadh, Saudi Arabia; et al.

Abstract:

Identifying reasons for under-reporting is crucial in reducing the incidence of medical errors. We studied physicians' knowledge of the occurrence, frequency and causes of medical errors and their actual practice toward reporting them. A cross-sectional, self-administered questionnaire was answered by 107 physicians at a tertiary-care hospital in Saudi Arabia. The questionnaire had 6 sections covering demographic data, knowledge, attitudes and practice towards reporting medical errors, perceived causes of and frequency of medical errors in their hospital and personal experiences of medical error reporting. Physicians tended not to report medical errors when no harm had occurred to patients. One-third of respondents feared punitive actions if they reported errors and only 56.4% felt that error reporting had led to positive changes in overall care. A majority of errors were related to late interventions and misdiagnosis. Under-reporting of medical errors was common in this hospital. Physicians did not appreciate attempts to improve the system of error reporting and a culture of blame still prevailed.

Journal: Eastern Mediterranean Health Journal

Year of Publication: 2015

Publication issue: 21(9)

Page numbers: 655-664

SHORTLINK: bit.ly/1UwCrYq

Title: Transient exposure to *Chlamydia trachomatis* can induce alteration of sperm function which cannot be stopped by sperm washing

Author(s): Al-Mously, N. & Eley, A.

Affiliation: Faculty of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; School of Medicine and Biomedical Sciences, University of Sheffield, Sheffield, UK.

Abstract:

Previous experiments have shown that *Chlamydia trachomatis* can directly affect sperm function and therefore may be an unrecognized contributor to male sub-fertility. However, the precise mechanism of sperm–chlamydial interaction remains unknown.

Aim: This experimental study attempted to replicate a transient exposure of sperm to *C. trachomatis* that might occur prior to assisted conception.

Methods: Six ejaculates from sperm donors were spiked with *C. trachomatis* serovar E and subjected to density centrifugation one hour later using a standard sperm washing technique. At 0, 6, and 24 h post-wash, the recovered motile suspension was evaluated for sperm motility, viability, phosphatidylserine externalization, DNA fragmentation and tyrosine phosphorylation. **Results:** The results show that even after a relatively short exposure to *C. trachomatis*, changes in sperm motility, viability, phosphatidylserine externalization and sperm DNA fragmentation were detected up to 24 h later. Only tyrosine phosphorylation was unaffected.

Conclusion: These results suggest that sperm washing cannot protect sperm from the deleterious effects of *C. trachomatis* exposure and this may explain some cases of poor IVF outcome or fertilization failure. We suggest that all patients should be screened and treated for *C. trachomatis* prior to assisted conception. This is one of the current guidelines also recommended by the British Fertility Society.

Journal: Middle East Fertility Society Journal

Year of Publication: 2015

Publication issue: 48-53

Page numbers: 20(1)

SHORTLINK: bit.ly/1XAxqoM

Title: Promoting excellence in teaching and learning in clinical education

Author(s): Alhaqwi, A. I. & Taha, S. W.

Affiliation: Department of Family Medicine, King Saud bin Abdul-Aziz University for Health Sciences, Riyadh, Saudi Arabia; Department of Orthopedics Surgery, King Saud bin Abdul-Aziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Many factors have been demonstrated to influence students' development of clinical competence. These factors include students' exposure to a large volume and variety of clinical experiences, learning in authentic clinical settings, self-directed learning, and the provision of a supportive environment. Clinical teachers have an extremely important role in the effectiveness of clinical education in supporting learners, encouraging reflection, and providing constructive and regular feedback. Early and frequent clinical experiences should be planned and integrated in curricula. The provision of such opportunities is associated with the development of appropriate attitudes and the acquisition of commendation and diagnostic skills among undergraduate medical students. The experiences of undergraduate medical students at clinical venues should be documented to enable monitoring of the quality of their exposure and planning for appropriate interventions. The combination of teaching in family practice centers and hospitals will probably provide the most effective approach and will combine the recognized advantages from different sites. The recent challenges facing the health care system necessitate the need for innovative teaching strategies, such as simulation, to meet the inadequacy of clinical cases at the teaching sites. The quality of clinical teaching should be maintained through regular evaluations of clinical teachers and all teaching activities. This article addresses the possible factors that could affect the process of student learning and suggests measures to promote the quality of clinical teaching and learning.

Journal: Journal of Taibah University Medical Sciences

Year of Publication: 2015

Publication issue: 10(1)

Page numbers: 97-101

SHORTLINK: bit.ly/1terDbY

Title: The prevalence of physical activity and its socioeconomic correlates in Saudi Arabia: A cross-sectional population-based national survey

Author(s): Al-Zalabani, A. H., Al-Hamdan, N. A. & Saeed, A. A.

Affiliation: College of Medicine, Taibah University, Almadinah, KSA; Department of Community Medicine, King Saud Bin Abdul Aziz University for Health Sciences, Faculty of Medicine, King Fahad Medical City, Riyadh, Saudi Arabia.

Abstract:

Objectives: To determine the levels of physical activity in the Saudi population and to assess its socio-demographic correlates.

Methods: The data were part of a cross-sectional representative national survey of 4758 participants conducted in Saudi Arabia. A multistage stratified cluster random sampling design was used. Physical activity was assessed using the Global Physical Activity Questionnaire (GPAQ) version 2.0. Logistic regression analyses were used to identify the determinants and were adjusted in relation to various factors.

Results: Overall, physical inactivity was found to be 66.6% (95% C.I.: 65.3%e68%), 60.1% (95% C.I.: 58.1%e62.1%) for males and 72.9% (95% C.I.: 71.1%e74.7%) for females. Leisure time physical inactivity was found to be 87.9%, 85.6% for males and 90.2% for females. The northern and central regions reported the highest prevalence of no physical activity at work, leisure and transportation.

Gender, geographical location and employment status exhibited a statistically significant correlation.

Conclusions: There is a high level of physical inactivity in various regions and population groups in the Saudi Arabia. Population interventions are greatly needed, especially those focusing on physical activity in their leisure time.

Journal: Journal of Taibah University Medical Sciences

Year of Publication: 2015

Publication issue: 10(2)

Page numbers: 208-215

SHORTLINK: bit.ly/22Mc514

Title: Mathematical Models for Estimating the Risks of Bovine Spongiform Encephalopathy (BSE)

Author(s): Al-Zoughool, M., Cottrell, D., Elsadaany, S., Murray, N., Oraby, T., et al.

Affiliation: ^{1,5} McLaughlin Center for Population Health Risk Assessment, University of Ottawa; Infection Control Infectious Diseases and Emergency Preparedness Branch Public Health Agency of Canada; Georgia Southern University, Georgia; King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

When the bovine spongiform encephalopathy (BSE) epidemic first emerged in the United Kingdom in the mid 1980s, the etiology of animal prion diseases was largely unknown. Risk management efforts to control the disease were also subject to uncertainties regarding the extent of BSE infections and future course of the epidemic. As understanding of BSE increased, mathematical models were developed to estimate risk of BSE infection and to predict reductions in risk in response to BSE control measures. Risk models of BSE-transmission dynamics determined disease persistence in cattle herds and relative infectivity of cattle prior to onset of clinical disease. These BSE models helped in understanding key epidemiological features of BSE transmission and dynamics, such as incubation period distribution and age-dependent infection susceptibility to infection with the BSE agent. This review summarizes different mathematical models and methods that have been used to estimate risk of BSE, and discusses how such risk projection models have informed risk assessment and management of BSE. This review also provides some general insights on how mathematical models of the type discussed here may be used to estimate risks of emerging zoonotic diseases when biological data on transmission of the etiological agent are limited.

Journal: Journal of Toxicology and Environmental Health-Part B-Critical Reviews

Year of Publication: 2015

Publication issue: 18(2)

Page numbers: 71-104

SHORTLINK: bit.ly/215k5CB

Title: Factors associated with poor asthma control in the outpatient clinical setting

Author(s): Al-Zahrani, J. M., Ahmad, A., Al-Harbi, A., Khan, A. M., Al-Bader, B., et al.

Affiliation: ¹⁻⁵ Pulmonary Division, King Saud University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

BACKGROUND/OBJECTIVES:

The goal of the study was to assess asthma control using asthma control test (ACT) and to explore the factors that effects asthma control among participants with bronchial asthma in the outpatient clinic setting.

METHODS:

This cross-sectional descriptive study was conducted in the outpatient primary care clinic at King Abdulaziz Medical City in Riyadh. Adult patients who were diagnosed with bronchial asthma by their primary treating physician were recruited over a 6-month period. Patients completed the ACT and questionnaires, which identified factors that affect asthma control.

RESULTS:

Four hundred asthmatic patients (n = 400) were enrolled, and 70% of these patients were women. Fifty-four percent of patients inappropriately used the inhaler device. The estimated prevalence of uncontrolled asthma at the time of the study was 39.8%. Inappropriate device use by the patient was more frequently associated with uncontrolled asthma (P-value = 0.001). Active smoking (P-value = 0.007), passive smoking (P-value = 0.019), unsealed mattress (P-value = 0.030), and workplace triggers (P-value = 0.036) were also associated with uncontrolled asthma. However, the extent of asthma control did not appear to be related to the existence of regular follow-ups, bedroom carpets, outpatient clinic visits, age, body mass index (BMI), or duration of asthma.

CONCLUSIONS:

The present study identified a high prevalence of uncontrolled asthma in the primary outpatient clinic setting and common risk factors that may contribute to poor asthma control.

Journal: Annals of Thoracic Medicine

Year of publication: 2015

Volume: 10(2)

Page numbers: 100-104

SHORTLINK: bit.ly/1U5Q3wM

Title: Stroke-free status and depression scores among Saudi dialysis patients

Author(s): Sheayria, F., Karkar, A. M., Almenawi, L. A., Alreemawi, R., Awn, N. et al.

Affiliation: Jeddah Kidney Center, King Fahd Hospital, Jeddah, Saudi Arabia; Kanoo Kidney Center, Dammam Medical Complex, Saudi Arabia; Laboratory Department, King Abdulaziz Hospital, Jeddah, Saudi Arabia; King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Saudi Center for Organ Transplantation, Riyadh, Saudi Arabia; et al.

Abstract:

Background: To assess the prevalence of stroke symptoms and depression among Saudi dialysis patients and related factors.

Methods: This is a cross-sectional multicentre study of Saudi dialysis patients. Demographics, clinical and laboratory's data were collected. Freedom from stroke symptoms was assessed using the Questionnaire for Verifying Stroke-Free Status and depression using the Geriatric Depression Scale.

Results: Five-hundred and forty-nine patients (77.3% response rate); 94.6% were receiving hemodialysis and 5.4% peritoneal dialysis were included in the study. Freedom from stroke was reported in 76.6% of patients, was higher in females ($p=0.07$), and was not affected by the presence of diabetes mellitus coronary artery disease or peripheral vascular disease. However, it was significantly lower in hypertensive patients ($p=0.035$) and was not affected by age, dialysis duration, Kt/V, albumin or hemoglobin levels. It was, however, more prevalent in the non-depressed patients compared to depressed patients ($p=0.036$). Mild and major depression scores were noted in 45.2% and 6.1%, respectively; the depression score being significantly higher in HD than in PD patients (6.3 ± 3.4 vs. 5.0 ± 3.2 $p=0.049$) but was not related to sex, employment, vascular access type, age, dialysis duration, Kt/V or serum albumin or hemoglobin levels.

Conclusion: A quarter of the patients were not stroke symptom-free and these were more likely the depressed patients, in females, but significantly less in hypertensive patients. Almost half of the patients were depressed with 6.1% having major depression. The depression score was significantly higher in HD than in PD patients.

Journal: Renal Failure

Year of Publication: 2015

Publication issue: 37(3)

Page numbers: 392-397

SHORTLINK: bit.ly/1rbrSCE

Title: Vitamin D deficiency and dyslipidemia in early pregnancy

Author(s): Al-Ajlan, A., Krishnaswamy, S., Alokail, M. S., Aljohani, N. J., Al-Serehi, A. et al.

Affiliation: King Saud University, Riyadh, Saudi Arabia; ²⁻³ Prince Mutaib Chair for Biomarkers of Osteoporosis, King Saud University, Riyadh, Saudi Arabia; Specialized Diabetes and Endocrine Center, King Fahad Medical City; Faculty of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Maternal-Fetal Medicine Department, King Fahad Medical City, Riyadh, Saudi Arabia; et al.

Abstract:

BACKGROUND: Vitamin D deficiency is a common nutritional issue and dietary supplementation in the general population, including pregnant women, is generally advised. Appropriately high levels of vitamin D are expected to play a role in containing the glycemic and atherogenic profiles observed in pregnancy. However, the relation between vitamin D status and the lipid metabolic profile in Saudi women, who are known to suffer from chronic vitamin D deficiency and high incidence of obesity and type II DM, during the course of pregnancy, is not known.

METHODS: In this study, we analyzed the relation between serum vitamin D level and various serum metabolic markers among Saudi women (n = 515) in their first trimester of pregnancy (11.2 ± 3.4 weeks). Coefficients of Pearson correlation and Spearman rank correlation were calculated for Gaussian and non-Gaussian variables, respectively. Serum vitamin D status was defined as (in nmol/L): deficient (<25), insufficient (25-50); sufficient (50-75) and desirable (>75).

RESULTS: Results indicated that vitamin D status was sufficient in only 3.5% of the study participants and insufficient and deficient in 26.2% and 68.0% of participants, respectively. Serum vitamin D values in the overall study population correlated positively with serum levels of total cholesterol (R = 0.172; p < 0.01), triglycerides (R = 0.184; p < 0.01) and corrected calcium (R = 0.141; p < 0.05). In the subgroup of vitamin D deficient subjects (n = 350), log serum vitamin D values correlated with serum triglycerides (R = 0.23; p = 0.002) and cholesterol (R = 0.26; p = 0.001).

CONCLUSIONS: The positive correlations between serum vitamin D and the atherogenic factors such as total cholesterol and triglycerides indicate a pro-atherogenic metabolic status in vitamin D deficient expectant mothers. This may represent an adaptation to the high metabolic demands of pregnancy.

Journal: BMC Pregnancy and Childbirth

Year of Publication: 2015

Publication issue: 15

Page numbers: 314

SHORTLINK: bit.ly/1UnBvpC

Title: Akt and Hippo Pathways in Ewing's Sarcoma Tumors and Their Prognostic Significance

Author(s): Ahmed, A. A., Abedalthagafi, M., Anwar, A. E., & Bui, M. M.

Affiliation: ¹⁻² Department of Pathology, King Fahad Medical City, Riyadh, Saudi Arabia; College of Public Health and Health Informatics, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Moffitt Cancer Center, University of South Florida, US.

Abstract:

Background: Ewing's sarcoma tumor is an aggressive malignancy of bone and soft tissue in children and young adults. Despite advances in modern therapy, metastasis occurs and results in high mortality. Intracellular molecules Yap, Akt, mTOR, and Erk are signaling pathway members that regulate the proliferation of tumor cells.

Objective and Methods: We studied the immunohistochemical expression of these proteins in 36 tumor samples from adult and pediatric patients with Ewing's sarcoma tumors. Patients' age, sex, tumor site, tumor size, clinical stage and survival (overall and disease-free survival) were collected. Tissue microarrays slides were stained with antibodies against Yap, Akt, mTOR, and Erk proteins.

Results: Tumors exhibited variable expression of Yap, Akt, mTOR, and Erk (from negative, low to high), with high levels of expression present in 31%, 53%, 77% and 0% respectively. Immunohistochemical expression of Akt was associated with worse overall and disease-free survival ($p < 0.05$). The other biomarkers did not demonstrate any difference in survival between low versus high expression.

Conclusion: Although Yap, Akt, mTOR, and Erk protein are all expressed in Ewing's sarcoma by immunohistochemistry, only Akt expression is associated with worse prognosis. Larger studies are needed to verify these results and plan targeted therapy, particularly against Akt.

Journal: Journal of Cancer

Year of Publication: 2015

Publication issue: 6(10)

Page numbers: 1005-1010

SHORTLINK: bit.ly/1tesRns

Title: CYP3A isoforms in Ewing's sarcoma tumours: an immunohistochemical study with clinical correlation

Author(s): Zia, H., Murray, G. I., Vyhlidal, C. A., Leeder, J. S., Anwar, A. E. et al.

Affiliation: Department of Pathology, University of Missouri, Kansas City, USA; Department of Pathology, University of Aberdeen, UK; Department of Clinical Pharmacology, Children's Mercy Hospital, Kansas City, USA; College of Public Health and Health Informatics, King Saud Bin Abdulaziz University, Riyadh, Saudi Arabia.

Abstract:

Ewing's sarcoma is an aggressive malignancy of bone and soft tissue with high incidence of metastasis and resistance to chemotherapy. Cytochrome P450 (CYP) monooxygenases are a family of enzymes that are involved in the metabolism of exogenous and endogenous compounds, including anti-cancer drugs, and have been implicated in the aggressive behaviour of various malignancies. Tumour samples and clinical information including age, sex, tumour site, tumour size, clinical stage and survival were collected from 36 adult and paediatric patients with Ewing's sarcoma family tumours. Tissue microarrays slides were processed for immunohistochemical labelling for CYP3A4, CYP3A5 and CYP3A7 using liver sections as positive control. The intensity of staining was scored as negative, low or high expression and was analysed statistically for any association with patients' clinical information. Four cases were later excluded due to inadequate viable tissue. CYP3A4 staining was present in 26 (81%) cases with high expression noted in 13 (40%) of 32 cases. High expression was significantly associated with distant metastases ($P < 0.05$). CYP3A5 and CYP3A7 were expressed in 5 and 13 cases respectively (15.6%, 40.6%). There was no association between the expression of CYP3A isoforms and age, sex, tumour size, or location (pelvic or extra-pelvic). None of the biomarkers showed any correlation with overall or disease-free survival. In conclusion, expression of CYP3A isoforms is noted in Ewing's sarcoma tumours and high CYP3A4 expression may be associated with metastasis. Additional studies are needed to further investigate the role of CYP3A4 in the prognosis of these tumours.

Journal: International Journal of Experimental Pathology

Year of Publication: 2015

Publication issue: 96(2)

Page numbers: 81-86

SHORTLINK: bit.ly/25JM3ap

Title: Lebanese medical students' intention to deliver smoking cessation advice

Author(s): Jradi, H., Wewers, M. E., Pirie, P. P., Binkley, P. F. & Fertketich, A. K.

Affiliation: ¹⁻⁵ College of Public Health and Health Informatics, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

OBJECTIVES:

Objectives of this study were to examine the constructs of the Theory of Planned Behavior and determine how they predict Lebanese medical students' behavioral intention to advise patients to quit smoking.

STUDY DESIGN:

This was a cross-sectional study conducted among 191 medical students from six medical schools in Lebanon.

METHODS:

The instrument contained scales that measured attitudes toward the behavior, behavioral beliefs, subjective norms, and perceived behavioral control. Psychometric properties of the scale were examined. Item to total scale score correlations were determined and linear regression was conducted to predict the intention to advise smokers to quit.

RESULTS:

Respondents had a positive, but not very high, intention to deliver smoking cessation advice. Students reported a positive attitude toward advising patients to quit cigarette smoking and a strong belief in the physician's obligations in smoking cessation advising. The majority reported lack of time to provide smoking cessation advice, insufficient knowledge of pharmacological aids, and the lack of openness of the patient to receive the advice. The attitude scale was the only variable that yielded a significant prediction of the intended behavior.

CONCLUSIONS:

The construct of attitude toward the behavior appeared to be the most predictive of the intention to deliver advice to quit smoking among Lebanese medical students. Focusing training efforts on this construct could improve the rate of delivery of brief cessation counseling.

Journal: Journal of Epidemiology and Global Health

Year of publication: 2015

Volume: 5(2)

Page numbers: 117-123

SHORTLINK: bit.ly/1YcJ4Fa

Title: Species identification within *Acinetobacter calcoaceticus-baumannii* complex using MALDI-TOF MS

Author(s): Toh, B. E. W., Paterson, D. L., Kamolvit, W., Zowawi, H., Kvakoff, D., et al.

Affiliation: ^{1-3,5} University of Queensland, Australia; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; WHO Collaborating Centre for Infection Prevention and Control & Gulf Cooperation Council Center for Infection Control, Riyadh, Saudi Arabia, et al.

Abstract:

Acinetobacter baumannii, one of the more clinically relevant species in the *Acinetobacter* genus is well known to be multi-drug resistant and associated with bacteremia, urinary tract infection, pneumonia, wound infection and meningitis. However, it cannot be differentiated from closely related species such as *Acinetobacter calcoaceticus*, *Acinetobacter pittii* and *Acinetobacter nosocomialis* by most phenotypic tests and can only be differentiated by specific, time consuming genotypic tests with very limited use in clinical microbiological laboratories. As a result, these species are grouped into the *A. calcoaceticus*-*A. baumannii* (Acb) complex. Herein we investigated the mass spectra of 73 *Acinetobacter* spp., representing ten different species, using an AB SCIEX 5800 MALDI-TOF MS to differentiate members of the *Acinetobacter* genus, including the species of the Acb complex. RpoB gene sequencing, 16S rRNA sequencing, and gyrB multiplex PCR were also evaluated as orthogonal methods to identify the organisms used in this study. We found that whilst 16S rRNA and rpoB gene sequencing could not differentiate *A. pittii* or *A. calcoaceticus*, they can be differentiated using gyrB multiplex PCR and MALDI-TOF MS. All ten *Acinetobacter* species investigated could be differentiated by their MALDI-TOF mass spectra.

Journal: Journal of Microbiological Methods

Year of Publication: 2015

Publication issue: 118

Page numbers: 128-132

SHORTLINK: bit.ly/1UogrPA

Title: A lesson learned from Middle East respiratory syndrome (MERS) in Saudi Arabia

Author(s): Al Shehri, A. M.

Affiliation: King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia.

Abstract:

Middle East respiratory syndrome (MERS) caused by novel Corona virus hit Saudi Arabia (KSA) and resulted in hundreds of mortality and morbidity, fears and psychosocial stress among population, economic loss and major political change at Ministry of Health (MoH). Although MERS discovered two years ago, confusion still exists about its origin, nature, and consequences. In 2003, similar virus (SARS) hit Canada and resulted in a reform of Canada's public health system and creation of a Canadian Agency for Public Health, similar to the US Centers for Disease Control (CDC). The idea of Saudi CDC is attractive and even "sexy" but it is not the best option. Experience and literature indicate that the best option for KSA is to revitalize national public health systems on the basis of comprehensive, continuing, and integrated primary health care (PHC) and public health (PH). This article proposes three initial, but essential, steps for such revitalization to take place: political will and support, integration of PHC and PH, and on-job professional programs for the workforce. In addition, current academic and training programs for PHC and PH should be revisited in the light of national vision and strategy that aim for high quality products that protect and promote healthy nation. Scientific associations, medical education research chair, and relevant academic bodies should be involved in the revitalization to ensure quality of process and outcomes.

Journal: Medical Teacher

Year of Publication: 2015

Publication issue: 37

Page numbers: S88-S93

SHORTLINK: bit.ly/22OiNgR

Title: Coenrollment in a Randomized Trial of High-Frequency Oscillation: Prevalence, Patterns, Predictors, and Outcomes

Author(s): Cook, D. J., Ferguson, N. D., Hand, L., Austin, P., Zhou, Q., ... Arabi, Y., et al.

Affiliation: Department of Medicine, McMaster University, Canada; Department of Clinical Epidemiology and Biostatistics, McMaster University, Canada; Interdepartmental Division of Critical Care Medicine, University of Toronto, Canada; Department of Medicine, University of Toronto, Canada; Department of Physiology, University of Toronto, Canada; et al.

Abstract:

OBJECTIVE: Enrollment of individual patients into more than one study has been poorly evaluated. The objective of this study was to describe the characteristics of patients, researchers and centers involved in coenrollment, studies precluding coenrollment, and the prevalence, patterns, predictors, and outcomes of coenrollment in a randomized clinical trial.

DESIGN, SETTING, METHODS: We conducted an observational study nested within the OSCILLation for Acute Respiratory Distress Syndrome Treated Early Trial, which compared high-frequency oscillatory ventilation to conventional ventilation. We collected patient, center, and study data on coenrollment in randomized patients. Multilevel regression examined factors independently associated with coenrollment, considering clustering within centers. We examined the effect of coenrollment on safety and the trial outcome.

INTERVENTIONS: None.

MEASUREMENTS AND MAIN RESULTS: Overall, 127 of 548 randomized patients (23.2%) were coenrolled in 25 unique studies. Coenrollment was reported in 17 of 39 centers (43.6%). Patients were most commonly coenrolled in one additional randomized clinical trial (76; 59.8%). Coenrollment was less likely in older patients (odds ratio, 0.87; 95% CI, 0.76-0.997), and in ICUs with greater than 26 beds (odds ratio, 0.56; 95% CI, 0.34-0.94), and more likely by investigators with more than 11 years of experience (odds ratio, 1.73; 95% CI, 1.06-2.82), by research coordinators with more than 8 years of experience (odds ratio, 1.87; 95% CI, 1.11-3.18) and in Canada (odds ratio, 4.66; 95% CI, 1.43-15.15). Serious adverse events were similar between coenrolled high-frequency oscillatory ventilation and control patients. Coenrollment did not modify the treatment effect of high-frequency oscillatory ventilation on hospital mortality.

CONCLUSIONS: Coenrollment occurred in 23% of patients, commonly in younger patients, in smaller centers with more research infrastructure, and in Canada. Coenrollment did not influence patient safety or trial results.

Journal: Critical Care Medicine

Year of Publication: 2015

Publication issue: 43(2)

Page numbers: 328-338

SHORTLINK: bit.ly/1OcLS2O

Title The Saudi Clinical Practice Guideline for the treatment of venous thromboembolism Outpatient versus inpatient management

Author(s): Al-Hameed, F. M., Al-Dorzi, H. M., Al-Momen, A. M., Algahtani, F. H., Al-Zahrant, H. A., et al.

Affiliation: ¹⁻³ College of Medicine, King Saud bin Abdulaziz University for Health Sciences, King Abdulaziz Medical City; King Saud University & Department of Hematology; et al.

Abstract:

Venous thromboembolism (VTE) including deep vein thrombosis (DVT) and pulmonary embolism (PE) is commonly encountered in daily clinical practice. After diagnosis, its management frequently carries significant challenges to the clinical practitioner. Treatment of VTE with the inappropriate modality and/or in the inappropriate setting may lead to serious complications and have life-threatening consequences. As a result of an initiative of the Ministry of Health of the Saudi Arabia, an expert panel led by the Saudi Association for Venous Thrombo-Embolism (a subsidiary of the Saudi Thoracic Society) and the Saudi Scientific Hematology Society with the methodological support of the McMaster University Guideline working group, this clinical practice guideline was produced to assist health care providers in VTE management. Two questions were identified and were related to the inpatient versus outpatient treatment of acute DVT, and the early versus standard discharge from hospital for patients with acute PE. The corresponding recommendations were made following the GRADE (Grading of Recommendations, Assessment, Development, and Evaluation) approach.

Journal: Saudi Medical Journal

Year of Publication: 2015

Publication issue: 36(8)

Page numbers: 1004-1010

SHORTLINK: [bit.ly/ 1RWNclk](http://bit.ly/1RWNclk)

Title: Treatment of ventilator-associated pneumonia and ventilator-associated tracheobronchitis in the intensive care unit. A national survey of clinicians and pharmacists in Saudi Arabia

Author(s): Al-Omari, A., Mohammed, M., Alhazzani, W., Al-Dorzi, H. M., Albshabshe, A. O., et al.

Affiliation: *Critical Care and Infectious Disease Department, Security Forces Hospital, Critical Care Department; Dr. Sulaiman Al-Habib Group of Hospitals, Critical Care Medicine Section, King Saud Bin Abdulaziz University for Health Sciences, King Abdulaziz Medical City, Department of Critical Care Medicine, Riyadh, Saudi Arabia; et al.*

Abstract:

OBJECTIVES:

To assess current practices of different healthcare providers for treating extensively drug-resistant (XDR) *Acinetobacter baumannii* (AB) infections in tertiary-care centers in Saudi Arabia.

METHODS:

This cross-sectional study was performed in tertiary-care centers of Saudi Arabia between March and June 2014. A questionnaire consisting of 3 parts (respondent characteristics; case scenarios on ventilator-associated pneumonia [VAP] and tracheobronchitis [VAT], and antibiotic choices in each scenario) was developed and sent electronically to participants in 34 centers across Saudi Arabia.

RESULTS:

One-hundred and eighty-three respondents completed the survey. Most of the respondents (54.6%) preferred to use colistin-based combination therapy to treat VAP caused by XDR AB, and 62.8% chose to continue treatment for 2 weeks. Most of the participants (80%) chose to treat VAT caused by XDR AB with intravenous antibiotics. A significant percentage of intensive care unit (ICU) fellows (41.3%) and clinical pharmacists (35%) opted for 2 million units (mu) of colistin every 8 hours without a loading dose, whereas 60% of infectious disease consultants, 45.8% of ICU consultants, and 44.4% of infectious disease fellows preferred a 9 mu loading dose followed by 9 mu daily in divided doses. The responses for the scenarios were different among healthcare providers (p less than 0.0001).

CONCLUSION:

Most of the respondents in our survey preferred to use colistin-based combination therapy and intravenous antibiotics to treat VAP and VAT caused by XDR AB. However, colistin dose and duration varied among the healthcare providers.

Journal: Saudi Medical Journal

Year of Publication: 2015

Publication issue: 36(12)

Page numbers: 1453-1462

SHORTLINK: bit.ly/1rcvBzP

Title: Withholding and Withdrawal of Life-Sustaining Treatments in Intensive Care Units in Asia

Author(s): Phua, J., Joynt, G. M., Nishimura, M., Deng, Y. ... Arabi, Y. M., et al.

Affiliation: National University Health System, Singapore; Chinese University of Hong Kong, Prince of Wales Hospital, Hong Kong, China; University of Tokushima Graduate School, Tokushima, Japan; West China Hospital of Sichuan University, Sichuan, China; King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

OBJECTIVE: To describe physicians' attitudes toward withholding and withdrawal of life-sustaining treatments in end-of-life care and to evaluate factors associated with observed attitudes.

DESIGN, SETTING, AND PARTICIPANTS: Self-administered structured and scenario-based survey conducted among 1465 physicians (response rate, 59.6%) who manage patients in ICUs (May-December 2012) at 466 ICUs (response rate, 59.4%) in 16 Asian countries and regions.

RESULTS: For patients with no real chance of recovering a meaningful life, 1029 respondents (70.2%) reported almost always or often withholding whereas 303 (20.7%) reported almost always or often withdrawing life-sustaining treatments; 1092 respondents (74.5%) deemed withholding and withdrawal ethically different. The majority of respondents reported that vasopressors, hemodialysis, and antibiotics could usually be withheld or withdrawn in end-of-life care, but not enteral feeding, intravenous fluids, and oral suctioning. For severe hypoxic-ischemic encephalopathy after cardiac arrest, 1201 respondents (82.0% [range between countries, 48.4%-100%]) would implement do-not-resuscitate orders, but 788 (53.8% [range, 6.1%-87.2%]) would maintain mechanical ventilation and start antibiotics and vasopressors if indicated. On multivariable analysis, refusal to implement do-not-resuscitate orders was more likely with physicians who did not value families' or surrogates' requests (adjusted odds ratio [AOR], 1.67 [95% CI, 1.16-2.40]; $P = .006$), who were uncomfortable discussing end-of-life care (AOR, 2.38 [95% CI, 1.62-3.51]; $P < .001$), who perceived greater legal risk (AOR, 1.92 [95% CI, 1.26-2.94]; $P = .002$), and in low- to middle-income economies (AOR, 2.73 [95% CI, 1.56-4.76]; $P < .001$). Nonimplementation was less likely with physicians of Protestant (AOR, 0.36 [95% CI, 0.16-0.80]; $P = .01$) and Catholic (AOR, 0.22 [95% CI, 0.09-0.58]; $P = .002$) faiths, and when out-of-pocket health care expenditure increased (AOR, 0.98 per percentage of total health care expenditure [95% CI, 0.97-0.99]; $P = .02$).

CONCLUSIONS AND RELEVANCE: Whereas physicians in ICUs in Asia reported that they often withheld but seldom withdrew life-sustaining treatments at the end of life, attitudes and practice varied widely across countries and regions. Multiple factors related to country or region, including economic, cultural, religious, and legal differences, as well as personal attitudes, were associated with these variations. Initiatives to improve end-of-life care in Asia must begin with a thorough understanding of these factors.

Journal: *Jama Internal Medicine*

Year of Publication: 2015

Publication issue: 175(3)

Page numbers: 363-371

SHORTLINK: bit.ly/1Uogaw6

Title: Satisfaction of medical students with simulation based learning

Author(s): Agha, S., Alhamrani, A. Y. & Khan M. A.

Affiliation: Medical Education Department, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Objectives: To evaluate medical students' satisfaction with simulation based learning strategy (SBL).

Methods: A cross-sectional survey was conducted between October and November 2013 at the College of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

All third and fourth year medical students (n=185) both males and females were included. A self-developed questionnaire on the effect of SBL was used. Items included were related to knowledge, skill, environment, resources, and faculty. The questionnaire was validated by an expert reviewer, and the reliability was calculated for all the questionnaire items. Responses were measured on a 5 point Likert-type scale, and statistical analysis was carried out.

Results: The response rate for this study was 62% (n=115). The alpha coefficient for all items was 0.73.

Overall, respondents from both years' students were satisfied with teaching strategy, use of mannequins, and learning environment. The challenges reported were lack of skill-laboratories facilities, students' cooperation, allocated time for skill-laboratories, and knowledge of instructor. There was a small, but significant difference between the satisfaction scores among genders ($p=0.001$). Whereas no difference was identified between the participants' scores on satisfaction with SBL and year of education ($p=0.62$).

Conclusion: Although there were few challenges, most of the students were satisfied that SBL improved their knowledge retention, skills, and communication.

Journal: Saudi Medical Journal

Year of Publication: 2015

Publication issue: 36(6)

Page numbers: 730-735

SHORTLINK: bit.ly/1OcMJ3M

Title: Problem-based learning in undergraduate medical education in Saudi Arabia: Time has come to reflect on the experience

Author(s): AlHaqwi, A. I., Mohamed, T. A., Al Kabba, A. F., Alotaibi, S. S., Al Shehri, A. M., et al.

Affiliation: ^{1-2,5} King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia; Al Imam Mohammad Ibn Saud Islamic University, Riyadh, Saudi Arabia; Ministry of Health, Gurrayat, Saudi Arabia;

Abstract:

BACKGROUND: Problem-based learning (PBL) is being increasingly used in many undergraduate medical schools worldwide due to its recognized advantages.

OBJECTIVES: To explore views of medical students in the Saudi Arabia about the appropriateness of the PBL concepts and process. Differences in students' views were examined as well.

METHODS: This is a cross-sectional, questionnaire-based study conducted in two medical colleges in Riyadh, Saudi Arabia, during the period from April to June 2012.

RESULTS: One hundred seventy four undergraduate medical students participated in the study. Majority of the participants supported the concept of PBL and thought it is a beneficial learning strategy. However, only about half of them consider the problems used in tutorials are relevant for the local setting. Significant differences have been identified between the gender, schools, and study level of participants and their views on the process of PBL tutorials. About 35% of participants either undecided or will not recommend medical schools that adopt PBL curriculums for their friends.

CONCLUSIONS: The majority of participants were satisfied with PBL approach and valued its importance in their learning process. Specific concerns have been expressed about relevance of some aspects of PBL. Underlying factors should be further explored in order to improve the outcomes of PBL curriculum in the local Saudi setting.

Journal: Medical Teacher

Year of Publication: 2015

Publication issue: 37

Page numbers: S61-S66

SHORTLINK: bit.ly/24ygxtr

Title: Students' perception of mentoring at Bahria University Medical and Dental College, Karachi

Author(s): Ali, S., Omair, A. & Baig, M.

Affiliation: Department of Medical Education, Liaquat National Hospital & Medical College, Karachi, Pakistan; Department of Medical Education, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Faculty of Medicine, King Abdul Aziz University, Jeddah, Saudi Arabia.

Abstract:

OBJECTIVE: To assess the students' perception regarding mentoring at different stages of their studies at a private-sector medical college.

METHODS: The cross-sectional study was conducted from April 2012 to July 2014 at Bahria University Medical and Dental College, Karachi, and comprised students from first to fourth year. Data was collected through a self-administered questionnaire, which was developed after literature search and discussion. The total score for the 35 questions was used as the 'perception score' for the students. The perceptions among all students in an academic year were compared using the Kruskal-Wallis test for median score differences.

RESULTS: Of the 401 students approached, 341(85%) completed the survey. The median perception scores for personal support ($p=0.81$) and career advice ($p=0.07$) were not different across the four years. There was a significant difference in the perception scores for role modelling ($p<0.001$) and research collaboration ($p=0.002$). Students in pre-clinical years (1st/2nd years) rated their mentors higher on role modelling aspects of mentoring ($p<0.001$) compared to those in the clinical years (3rd/4th years).

CONCLUSIONS: Agreement for personal support had the highest score out of the four categories which was not different among all the four years. However, students' perception varied among preclinical and clinical groups when it came to the matter of career advising and role modelling.

Journal: Journal of the Pakistan Medical Association

Year of Publication: 2015

Publication issue: 65(6)

Page numbers: 615-619

SHORTLINK: bit.ly/1Y88SC3

Title: Towards integration of health economics into medical education and clinical practice in Saudi Arabia

Author(s): Da'ar, O. B. & Al Shehri A. M.

Affiliation: King Saud Bin Abdulaziz University for Health Sciences, Saudi Arabia; College of Public Health & Health Informatics, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

In an era of expanding health sectors and rising costs, doctors are expected to have a working knowledge of health economics to better use resources and improve outcomes and quality of health care. This article recognizes the dearth of knowledge and application of economic analyses in medical education and clinical practice in Saudi Arabia. In particular, it highlights the desirability of knowledge of health economics in ensuring certain competencies in medical education and the rationale for inviting doctors to apply knowledge of economics in Saudi Arabia. In addition, the article discusses challenges that hinder integrating health economics into clinical practice. Furthermore, the article typifies some of the important economic phenomena that physicians need to discern. Besides, the article provides implications for incorporating economic analysis into medical education and clinical practice in Saudi Arabia. Finally, the article concludes by demonstrating how health economics can enhance doctors' knowledge and recommends the country to move towards integrating health economics into medical education and clinical practice for best practice.

Journal: Medical Teacher 37: S56-S60

Year of Publication: 2015

Publication issue: Epub 2015

Page numbers:

SHORTLINK: bit.ly/1X9JFYx

Title: A guide to developing a competency based curriculum for a residency training program - Orthopaedic prospective

Author(s): Taha, W. S.

Affiliation: Prince Mohammed bin Abdulaziz Hospital, Almadinah, Saudi Arabia; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Residency training programs have emerged as an essential and important element in the lifelong learning path for any physician. In the Saudi Arabia (KSA), residency programs in different specialties have been implemented for more than 25 years. Although a number of changes have taken place regarding the format and conduct of these different training programs, the majority of residency programs have been developed based on the expertise of the prominent academics in the field and on feedback from physicians that underwent previous training programs in the region. However, in many centres, the true needs of physicians are not met and the teaching strategies used do not result in the intended outcome. In recent years, many new models for the development of residency program curricula have been developed worldwide. Many of these models are based on specific needs or are goal-driven. This article describes several of the essential and fundamental concepts for developing a competency-based curriculum for a residency training program in the field of orthopaedics. The concept of backward planning is explained, and the possible teaching methods based on the identified competencies and desired learning outcomes of physicians are illustrated.

Journal: Journal of Taibah University Medical Sciences

Year of Publication: 2015

Publication issue: 10(1)

Page numbers: 109-115

SHORTLINK: bit.ly/1tgkaZL

Title: Assessing Bimanual Performance in Brain Tumor Resection With NeuroTouch, a Virtual Reality Simulator

Author(s): Alotaibi, F. E., AlZhrani, G. A., Mullah, M. A. S., Sabbach, A. J., Azarnoush, H, et al.

Affiliation: ^{1-2,4-5}Department of Neurosurgery, Montreal Neurological Institute and Hospital, McGill University, Montreal, Quebec, Canada; McGill University, Montreal, Quebec, Canada; ⁴ Faculty of Medicine, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

BACKGROUND: Validated procedures to objectively measure neurosurgical bimanual psychomotor skills are unavailable. The NeuroTouch simulator provides metrics to determine bimanual performance, but validation is essential before implementation of this platform into neurosurgical training, assessment, and curriculum development.

OBJECTIVE: To develop, evaluate, and validate neurosurgical bimanual performance metrics for resection of simulated brain tumors with NeuroTouch.

METHODS: Bimanual resection of 8 simulated brain tumors with differing color, stiffness, and border complexity was evaluated. Metrics assessed included blood loss, tumor percentage resected, total simulated normal brain volume removed, total tip path lengths, maximum and sum of forces used by instruments, efficiency index, ultrasonic aspirator path length index, coordination index, and ultrasonic aspirator bimanual forces ratio. Six neurosurgeons and 12 residents (6 senior and 6 junior) were evaluated.

RESULTS: Increasing tumor complexity impaired resident bimanual performance significantly more than neurosurgeons. Operating on black vs glioma-colored tumors resulted in significantly higher blood loss and lower tumor percentage, whereas altering tactile cues from hard to soft decreased resident tumor resection. Regardless of tumor complexity, significant differences were found between neurosurgeons, senior residents, and junior residents in efficiency index and ultrasonic aspirator path length index. Ultrasonic aspirator bimanual force ratio outlined significant differences between senior and junior residents, whereas coordination index demonstrated significant differences between junior residents and neurosurgeons.

CONCLUSION: The NeuroTouch platform incorporating the simulated scenarios and metrics used differentiates novice from expert neurosurgical performance, demonstrating NeuroTouch face, content, and construct validity and the possibility of developing brain tumor resection proficiency performance benchmarks.

Journal: Operative Neurosurgery

Year of Publication: 2015

Publication issue: 11(1)

Page numbers: 89-98

SHORTLINK: bit.ly/22O1N9

Title: Evaluation of diploma in bioethics programme, Karachi, Pakistan: An educational research

Author(s): Shamim, M. S., Shirazi, B. & Omair, A.

Affiliation: King Abdul Aziz University, Rabigh, Jeddah, Saudi Arabia; Department of Surgery, Ziauddin University, Karachi; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

OBJECTIVE:

To perform an outcome-based evaluation of the diploma programme initiated in 2006 at the Centre of Biomedical Ethics and Culture.

METHODS:

The broad based evaluation was done at the Centre of Biomedical Ethics and Culture, Sindh Institute of Urology and Transplantation, Karachi, from July 2011 to June 2012 and comprised pass out batches from 2006 to 2010. Outcome logic model was applied through a questionnaire-based approach. Emails were sent to the graduates, containing a mix of closed and open-ended questions. Quantitative feedback was analysed for frequencies and percentages. Content analysis was conducted for open-ended responses. SPSS 19 was used for statistical analysis.

RESULTS:

Four batches had graduated in the five-year study period. A total of 50 students had been enrolled, while 41(82%) graduated. Of them, 31(76%) graduates responded. Overall, 10(24%) graduates completed their Masters in bioethics, and 16(39%) were involved in institutional ethics committee. All (100%) believed the diploma had increased their knowledge of ethics and they were involved in disseminating the acquired knowledge through presentations, seminars/conferences 29(93.5%), teaching and awareness activities 22(71%). Besides, 28(90%) respondents believed their behaviour had changed and 27(87%) were improving the quality of work and environment, while 18(58%) had published related articles after their diploma.

CONCLUSIONS:

The programme was found to have achieved its objective during the first five years of its inception.

Journal: Journal of the Pakistan Medical Association

Year of Publication: 2015

Publication issue: 65(4)

Page numbers: 397-403

SHORTLINK: bit.ly/1Y88PWW

Title: Reprioritizing current research trends in medical education: A reflection on research activities in Saudi Arabia

Author(s): Obeidat, A. S., Alhaqwi, A. I. & Abdulghani, I. M.

Affiliation: Alfaisal University, Saudi Arabia; King Saud bin AbdulAziz University for Health Sciences, Saudi Arabia; King Saud University, Saudi Arabia.

Abstract:

BACKGROUND:

There are numerous national efforts to determine and develop research priorities of medical education in Saudi Arabia. These priorities were first proposed in 2010 by "Dr Al-Khuli's Chair for Developing Medical Education in Saudi Arabia". The proposed priority domains were: curriculum, students, faculty, and quality assurance and accreditation.

AIM:

To investigate publications in medical education at the national and international levels in areas relating to these proposed priorities.

METHODS:

Electronic search within PubMed database for papers relating to each domain of priority was conducted at national and international levels in the last three years, using the same keywords as the priority domains, but only confined to undergraduate medical education.

RESULTS:

Out of 3145 articles retrieved when searching with keyword as broad as "undergraduate medical curriculum" only 81 articles worldwide and 3 articles from Saudi Arabia were dealing with curriculum related issues as a whole. Further search on the sub-domains "effective strategies to manage undergraduate curriculum" and "undergraduate medical education models", resulted in the retrieval of few articles worldwide and none from Saudi Arabia. At the national level, there were 63 publications from Saudi Arabia that were either course (topic)-specific or could not be classified under the four domains specified by Dr Al-Khuli's Chair.

CONCLUSION:

Research activities in medical education in Saudi Arabia in the last 3 years showed diversity and lack of focus in the research priorities. Efforts of academic and research centers should continue to monitor and encourage these activities toward achieving the recommended priorities.

Journal: Medical Teacher

Year of Publication: 2015

Publication issue: 37

Page numbers: S5-S8

SHORTLINK: bit.ly/1Y892t0

Title: Guidelines for the Appropriate Use of Bedside General and Cardiac Ultrasonography in the Evaluation of Critically Ill Patients-Part I: General Ultrasonography

Author(s): Frankel, H. L., Kirkpatrick, A. W., Elbarbary, M., Blaivas, M., Desai, H. et al.

Affiliation: Los Angeles, CA; Foothills Medical Centre and the University of Calgary, Canada; National and Gulf Center for Evidence Based Health Practice, Riyadh, Saudi Arabia; King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Department of Clinical Epidemiology and Biostatistics, McMaster University, Canada.

Abstract:

OBJECTIVE: To establish evidence-based guidelines for the use of bedside ultrasound by intensivists and specialists in the ICU and equivalent care sites for diagnostic and therapeutic purposes for organs of the chest, abdomen, pelvis, neck, and extremities.

METHODS: The Grading of Recommendations, Assessment, Development and Evaluation system was used to determine the strength of recommendations as either strong or conditional/weak and to rank the "levels" of quality of evidence into high (A), moderate (B), or low (C) and thus generating six "grades" of recommendation (1A-1B-1C-2A-2B-2C). Grading of Recommendations, Assessment, Development and Evaluation (GRADE) was used for all questions with clinically relevant outcomes. RAND appropriateness method, incorporating modified Delphi technique, was used in steps of GRADE that required panel judgment and for those based purely on expert consensus. The process was conducted by teleconference and electronic-based discussion, following clear rules for establishing consensus and agreement/disagreement. Individual panel members provided full disclosure and were judged to be free of any commercial bias. The process was conducted independent of industry funding.

RESULTS: Twenty-four statements regarding the use of ultrasound were considered-three did not achieve agreement and nine were approved as conditional recommendations (strength class 2). The remaining 12 statements were approved as strong recommendations (strength class 1). Each recommendation was also linked to its level of quality of evidence. Key strong recommendations included the use of ultrasonography for ruling-in pleural effusion and assisting its drainage, ascites drainage, ruling-in pneumothorax, central venous cannulation, particularly for internal jugular and femoral sites, and for diagnosis of deep venous thrombosis. Conditional recommendations were given to the use of ultrasound by the intensivist for diagnosis of acalculous cholecystitis, renal failure, and interstitial and parenchymal lung diseases. No recommendations were made regarding static (vs dynamic) ultrasound guidance of vascular access or the use of needle guide devices.

CONCLUSIONS: There was strong agreement among a large cohort of international experts regarding several recommendations for the use of ultrasound in the ICU...

Journal: Critical Care Medicine

Year of Publication: 2015

Publication issue: 43(11)

Page numbers: 2479-2502

SHORTLINK: [bit.ly/ http:// 1UEb95c](http://bit.ly/1UEb95c)

Title: Dose reduction of scattered photons from concrete walls lined with lead: Implications for improvement in design of megavoltage radiation therapy facility mazes

Author(s): Al-Affan, I. A. M., Hugtenburg, R. P., Bari, D. S., Al-Saleh, W. M., Piliero, M. et al.

Affiliation: ¹⁻²Swansea University, Swansea, UK; Swansea University, Swansea, UK; Swansea University, Swansea, UK and King Saud Bin Abdulaziz University for Health Science, Hofuf, Saudi Arabia; Swansea University, Swansea, UK; et al.

Abstract:

Purpose:

This study explores the possibility of using lead to cover part of the radiation therapy facility maze walls in order to absorb low energy photons and reduce the total dose at the maze entrance of radiation therapy rooms.

Methods:

Experiments and Monte Carlo simulations were utilized to establish the possibility of using high-Z materials to cover the concrete walls of the maze in order to reduce the dose of the scattered photons at the maze entrance. The dose of the backscattered photons from a concrete wall was measured for various scattering angles. The dose was also calculated by the FLUKA and EGSnrc Monte Carlo codes. The FLUKA code was also used to simulate an existing radiotherapy room to study the effect of multiple scattering when adding lead to cover the concrete walls of the maze. Monoenergetic photons were used to represent the main components of the x ray spectrum up to 10 MV.

Results:

It was observed that when the concrete wall was covered with just 2 mm of lead, the measured dose rate at all backscattering angles was reduced by 20% for photons of energy comparable to Co-60 emissions and 70% for Cs-137 emissions. The simulations with FLUKA and EGS showed that the reduction in the dose was potentially even higher when lead was added. One explanation for the reduction is the increased absorption of backscattered photons due to the photoelectric interaction in lead. The results also showed that adding 2 mm lead to the concrete walls and floor of the maze reduced the dose at the maze entrance by up to 90%.

Conclusions:

This novel proposal of covering part or the entire maze walls with a few millimeters of lead would have a direct implication for the design of radiation therapy facilities and would assist in upgrading the design of some mazes, especially those in facilities with limited space where the maze length cannot be extended to sufficiently reduce the dose.

Journal: Medical Physics

Year of publication: 2015

Volume: 42(2)

Page numbers: 606-614

SHORTLINK: bit.ly/1tgkPdm

Title: Preoperative ripening of the cervix before operative hysteroscopy

Author(s): Al-Fozan, H., Firwana, B., Al Kadri, H., Hassan, S. & Tulandi, T.

Affiliation: ^{1,3} King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; University of Missouri, Columbia, USA; King Abdulaziz Medical City, Riyadh, Saudi Arabia; McGill University, Montreal, Canada.

Abstract:

BACKGROUND: Hysteroscopy is an operation in which the gynaecologist examines the uterine cavity using a small telescopic instrument (hysteroscope) inserted via the vagina and the cervix. Almost 50% of hysteroscopic complications are related to difficulty with cervical entry. Potential complications include cervical tears, creation of a false passage, perforation, bleeding, or simply difficulty in entering the internal os (between the cervix and the uterus) with the hysteroscope. These complications may possibly be reduced with adequate preparation of the cervix (cervical ripening) prior to hysteroscopy. Cervical ripening agents include oral or vaginal prostaglandin, which can be synthetic (e.g. misoprostol) or natural (e.g. dinoprostone) and vaginal osmotic dilators, which can be naturally occurring (e.g. laminaria) or synthetic.

OBJECTIVES: To determine whether preoperative cervical preparation facilitates cervical dilatation and reduces the complications of operative hysteroscopy in women undergoing the procedure for any condition.

SEARCH METHODS: In August 2014 we searched sources including the Menstrual Disorders and Subfertility Group (MDSG) Trials Register, Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, PsycINFO, CINAHL, ClinicalTrials.gov and reference lists of relevant articles. We searched for published and unpublished studies in any language.

SELECTION CRITERIA: Two review authors independently selected randomised controlled trials (RCTs) of cervical ripening agents used before operative hysteroscopy in pre- and postmenopausal women. Cervical ripening agents could be compared to each other, placebo or no treatment.

DATA COLLECTION AND ANALYSIS: Data extraction and quality assessment were conducted independently by two review authors. The primary review outcomes were effectiveness of cervical dilatation (defined as the proportion of women requiring mechanical cervical dilatation) and intraoperative complications. Secondary outcomes were mean time required to dilate the cervix, preoperative pain, cervical width, abandonment of the procedure, side effects of dilating agents and duration of surgery. We calculated odds ratios (ORs) for dichotomous outcomes and mean differences (MDs) for continuous outcomes, with 95% confidence intervals (CIs). Data were statistically pooled where appropriate. Heterogeneity was assessed using the I(2) statistic. The overall quality of the evidence was assessed using GRADE methods....

Journal: Cochrane Database of Systematic Reviews

Year of Publication: 2015

Publication issue: (4)

Page numbers: -

SHORTLINK: bit.ly/1WEjucG

Title: Advancing paternal age does not affect in-vitro fertilization (IVF) outcomes in a Saudi population

Author(s): Alfaraj, S. S. & Yunus, F.

Affiliation: Reproductive Endocrinology and Infertility Unit, King Abdul-Aziz Medical City, Riyadh, Saudi Arabia; College of Public Health and Health Informatics, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:
Objective

To evaluate the effect of paternal age on in-vitro fertilization (IVF) outcomes

Design

Retrospective cohort study

Setting

Reproductive Endocrinology and Infertility Unit

Patients

The study included 451 couples undergoing their first IVF cycle

Main outcome measures

Effect of advancing paternal age on: semen parameters; IVF cycle-related factors e.g., number of oocyte retrieved, fertilization rate, high quality embryo rate; and IVF outcome i.e., pregnancy rate

Results

The mean paternal age in our study was 36.3 years (range: 24–76 years). Approximately half of the study couples (51.9%) had secondary infertility with anovulation being the major cause. We found no significant correlations between the advancing paternal age and the semen parameters – sperm volume ($p = 0.28$), sperm concentration ($p = 0.47$), or sperm motility ($p = 0.91$). IVF cycle-related factors did not significantly differ for advancing paternal age groups – number of oocyte retrieved ($p = 0.52$), number of embryos fertilized ($p = 0.14$), fertilization rate ($p = 0.94$), or the high quality embryo rate ($p = 0.84$). Likewise, we found no significant association between the advancing paternal age and the positive IVF outcome i.e., the positive serum pregnancy test ($p = 0.64$).

Conclusion

Advancing paternal age does not affect the IVF outcomes in a Saudi population.

Journal: Middle East Fertility Society Journal

Year of Publication: 2015

Publication issue: 20(3)

Page numbers: 204-208

SHORTLINK: bit.ly/1XCQQcT

Title: A comparison on the prevalence and outcomes of gestational versus type 2 diabetes mellitus in 1718 Saudi pregnancies

Author(s): Al Serehi, A., Ahmed, A. M., Shakeel, F., Alkhatani, K., El-Bakri, N. K., et al.

Affiliation: King Fahad Medical City Riyadh, Saudi Arabia; Women's Specialized Hospital, Riyadh, King Fahad Medical City Riyadh, Saudi Arabia; Prince Mutaib Chair for Biomarkers of Osteoporosis, King Saud University Riyadh, Saudi Arabia; Research Center of Medicine, King Saud Bin Abdulaziz University for Health Sciences Riyadh, Saudi Arabia; et al.

Abstract:

The presence of either diabetes mellitus type 2 (DMT2) or GDM constitute a high-risk pregnancy. Given the high rate of DMT2 and GDM in the Saudi Arabia (KSA), no study has ever compared whether GDM outcomes are comparable to those with DMT2. The present study aims to compare for the first time, maternal and neonatal outcomes among Saudi patients with GDM, DMT2 and non-DM groups. This is a retrospective study covering data from 1718 pregnant patients admitted at King Fahad Medical City, Riyadh, KSA from April 2011 to March 2013. The prevalence of GDM was 13.8%, DMT2 was 0.9%. DMT2 group had the highest mean parity and shortest mean gestational age as compared to other groups. Half of all the subjects in the DMT2 group also experienced preterm labor, as opposed to only 10% in GDM and 14% in the non-DM group, respectively. Finally, neonates delivered by DMT2 mothers had the highest percentage of admissions to NICU (33%) as compared to 10% in the non-DM group and only 5% in the GDM group. Outcomes of the GDM group are almost comparable with the non-DM group. While the results of the present study reflect the efficient management of GDM cases in Saudi patients, DMT2 complicated pregnancies, which are considered to be at a much higher risk for maternal and neonatal complications, should be given equally special attention.

Journal: International Journal of Clinical and Experimental Medicine

Year of Publication: 2015

Publication issue: 8(7)

Page numbers: 11502-11507

SHORTLINK: bit.ly/1YdSTCK

Title: National Guidelines for Colorectal Cancer Screening in Saudi Arabia with strength of recommendations and quality of evidence

Author(s): Alsanea, N., Almadi, M. A., Abduljabbar, A. S., Alhomoud, S., Alshaban, T. A., et al.

Affiliation: Saudi Society of Colon & Rectal Surgery; King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia; Saudi Gastroenterology Association; King Saud University, Riyadh, Saudi Arabia; Saudi Society of Colon & Rectal Surgery; King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia; Ministry of Health, Saudi Arabia; Saudi Oncology Society; King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia; et al.

Abstract:

BACKGROUND: Colorectal cancer is the most common cancer among Saudi men and the third commonest among Saudi women. Given the predominance of colorectal cancer compared with other cancers in Saudi Arabia, context-specific guidelines are needed for screening.

METHODS: The Saudi Centre for Evidence-Based Healthcare assembled a panel of experts from the Saudi Society of Colon and Rectal Surgery, Saudi Gastroenterology Association, the Saudi Oncology Society, the Saudi Chapter of Enterostomal Therapy, the Family Medicine and Department of Public Health at the Saudi Arabian Ministry of Health and a patient advocate. The panel collaborated with a methodological team from McMaster University, Canada to develop national guidelines for colorectal cancer screening. After identifying key questions, the panel conducted a systematic review of all reports on the utility of screening, the cost of screening for colorectal cancer in Saudi Arabia and on the values and preferences of Saudi patients. Meta-analyses, when appropriate, were performed to generate pooled estimates of effect. Using the GRADE approach, the panel used the evidence-to-decision (EtD) framework to assess all domains important in determining the strength and direction of the recommendations (benefits and harms, values and preferences, resource implications, equity, acceptability, and feasibility). Judgments related to the EtD domains were resolved through consensus or voting, if consensus was not reached. The final recommendations were developed during a two-day meeting held in Riyadh, Saudi Arabia in March 2015. Conflicts of interests among the panel members were handled according to the World Health Organization rules.

CONCLUSION: The panel recommends screening for colorectal cancer in Saudi Arabia in asymptomatic Saudi patients at average risk of colorectal cancer. An infrastructure should be built to achieve that goal.

Journal: Annals of Saudi Medicine

Year of Publication: 2015

Publication issue: 35(3)

Page numbers: 189-195

SHORTLINK: bit.ly/1ZwLvKx

Title: Detection of BCR/ABL fusion gene by hematological and cytogenetical analysis in chronic myeloid leukemia patients in Quetta, Pakistan

Author(s): Tahira, B., Asif, M., Khan, N., Hussain, A., ... Iqbal, Z., et al.

Affiliation: ¹⁻⁴ Department of Biotechnology, Balochistan University of Information Technology, Engineering and Management Sciences, Quetta; College of Applied Medical Sciences, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

BACKGROUND:

Chronic myeloid leukemia (CML) is a myeloproliferative disorder of pluripotent stem cells, caused by reciprocal translocation between the long arms of chromosomes 9 and 22, t(9;22)(q34;q11), known as the Philadelphia chromosome.

MATERIALS AND METHODS:

A total of 51 CML patients were recruited in this study. Complete blood counts of all CML patients were performed to find out their total leukocytes, hemoglobin and platelets. FISH was performed for the detection of BCR-ABL fusion and cryptogenic tests using bone marrow samples were performed for the conformation of Ph (9;22)(q34;q11) and variant translocation mechanisms.

RESULTS:

In cytogenetic analysis we observed that out of 51 CML patients 40 (88.9%) were Ph positive and 4 (8.88%) had Ph negative chromosomes. Mean values of WBC 134.5 103/ μ l, hemoglobin 10.44 mg/dl, and platelets 288.6 103/ μ l were observed in this study.

CONCLUSIONS:

In this study, Ph positive translocation between chromosome (9:22)(q34;q11) were observed in 40 (88.9%) CML patients.

Journal: Asian Pacific Journal of Cancer Prevention

Year of Publication: 2015

Publication issue: 16(9)

Page numbers: 3793-3797

SHORTLINK: bit.ly/1UEbcOn

Title: Patterns of childhood cancer incidence in Saudi Arabia (1999-2008)

Author(s): Al-Mutlaq, H. M., Bawazir, A. A., Jradi, H., Al-Dhalaan, Z. A. & Al-Sheri, A.

Affiliation: Qassim University, Qassim, Saudi Arabia; Community Medicine, College of Medicine, Aden University, Yemen; College of Medicine, Aden University, Yemen; College of Public Health and Health Informatics, KSAU-HS, King Abdulaziz Medical City National Guard Health Affairs, Riyadh, Saudi Arabia.

Abstract:

BACKGROUND:

Although childhood cancer is a rare disease, 100,000 children younger than 15 years of age die from cancer each year, the majority of them in developing countries. More data need to be gathered and published particularly in developing countries to better understand the scale of the problem.

AIMS:

This study aimed to describe the patterns of childhood cancers in Saudi Arabia over a period of ten years (1999-2008).

MATERIALS AND METHODS:

This descriptive retrospective study was based on secondary data from the Saudi Cancer Registry from 1999 to 2008. All Saudi cases (both genders), under the age of 15 years, who were diagnosed with cancer during the study period, were included in this study.

RESULTS:

Childhood cancer in Saudi Arabia, in the period between 1999 and 2008, accounted for about 8% of total cancer cases. The most common encountered cancers were leukemia (34.1%), followed by lymphoma (15.2%), brain (12.4%), and kidney cancers (5.3%). The overall incidence of childhood cancers increased from 8.8 per 100,000 in 1999 to 9.8 per 100,000 in 2008. The incidence rates of cancers per 100,000 in the years 1999 and 2008 were generally higher among males, (9.4 and 11.5 in males vs. 8.3 and 8.1 in females). The highest incidence rate in the surveyed years was apparent in the birth to age 4 years group.

CONCLUSIONS:

Cancer is an important public health problem in Saudi Arabia and a major ascending contributor to mortality and morbidity in children. More studies are required to describe the patterns of childhood cancers and related risk factors in Saudi Arabia.

Journal: Asian Pacific Journal of Cancer Prevention

Year of Publication: 2015

Publication issue: 16(2)

Page numbers: 431-435

SHORTLINK: bit.ly/25Lj9di

Title: Perceived stress levels, chemotherapy, radiation treatment and tumor characteristics are associated with a persistent increased frequency of somatic chromosomal instability in women diagnosed with breast cancer: A one year longitudinal study

Author(s): Aboalela, N., Lyon, D., Elswick, R. K., Kelly, D. L. & Brumelle, J., et al.

Affiliation: Virginia Commonwealth University, Richmond, Virginia, USA and King Saud bin Abdulaziz, University for Health Sciences; ²⁻⁴ School of Nursing, Virginia Commonwealth University, USA; Virginia Commonwealth University, USA.

Abstract

While advances in therapeutic approaches have resulted in improved survival rates for women diagnosed with breast cancer, subsets of these survivors develop persistent psychoneurological symptoms (fatigue, depression/anxiety, cognitive dysfunction) that compromise their quality of life. The biological basis for these persistent symptoms is unclear, but could reflect the acquisition of soma-wide chromosomal instability following the multiple biological/psychological exposures associated with the diagnosis/treatment of breast cancer. An essential first step toward testing this hypothesis is to determine if these cancer-related exposures are indeed associated with somatic chromosomal instability frequencies. Towards this end, we longitudinally studied 71 women (ages 23-71) with early-stage breast cancer and quantified their somatic chromosomal instability levels using a cytokinesis-blocked micronuclear/cytome assay at 4 time points: before chemotherapy (baseline); four weeks after chemotherapy initiation; six months after chemotherapy (at which time some women received radiotherapy); and one year following chemotherapy initiation. Overall, a significant change in instability frequencies was observed over time, with this change differing based on whether the women received radiotherapy ($p=0.0052$). Also, significantly higher instability values were observed one year after treatment initiation compared to baseline for the women who received: sequential taxotere /doxorubicin /cyclophosphamide ($p<0.001$) or taxotere/cyclophosphamide ($p=0.014$). Significant predictive associations for acquired micronuclear/cytome abnormality frequencies were also observed for race ($p=0.0052$), tumor type [luminal B tumors] ($p=0.0053$), and perceived stress levels ($p=0.0129$). The impact of perceived stress on micronuclear/cytome frequencies was detected across all visits, with the highest levels of stress being reported at baseline ($p=0.0024$). These findings suggest that the cancer-related exposome has an impact on both healthy somatic cells and tumor cells, and may lead to persistent chromosomal instability. In addition, stress was a significant predictor of chromosomal instability; thus, interventions that aim to reduce stress may reduce acquired soma-wide chromosomal instability for cancer survivors.

Journal: Plos One

Year of publication: 2015

Volume: 10(7)

Page numbers:

SHORTLINK: [bit.ly/ 1UegGku](http://bit.ly/1UegGku)

Title: Effects of hemoglobin S variants on the measurement of glycosylated hemoglobin A1c by four analytical methods

Author(s): Tamimi, W., Aljasser, S., Kanan, R., Dafterdar, R., Aldegaither, N., et al.

Affiliation: ^{1-3,5} Department of Pathology & Laboratory Medicine, King Saud Bin Abdulaziz University for Health Sciences, National Guard, Riyadh, Saudi Arabia; Department of Pathology & Laboratory Medicine, Riyadh Military Hospital, Riyadh, Saudi Arabia; et al.

Abstract:

Glycosylated hemoglobin (HbA1c) identifies the average plasma glucose concentration over 120 days. HbA1c test measurements can lead to false outcomes in patients with inherited hemoglobin variants as hemoglobin S, which is prevalent in the Middle Eastern population. Our aim was to evaluate four different methods for measuring the blood HbA1c levels in diabetic patients with sickle cell anemia (SCA) and sickle cell trait (SCT). Blood samples were collected in EDTA tubes from 38 diabetic patients with either SCA or SCT. HbA1c levels were measured on all samples at three different local hospitals using three different analyzers: the Cobas Integra700 (Roche, SZ), the Dimension RXL (Siemens, USA), and the DCA2000 (Siemens, USA). All methods were compared to the standard HPLC method Variant (Bio-Rad, USA). There was a good correlation (R²) between HbA1c levels measured by the HPLC Variant II and immunoassay analyzers and between the immunoassay analyzers themselves in SCT, but not in SCA, patients. However, an excellent correlation was observed in the SCA group between the Dimension RXL and Cobas Integra analyzers (R²=0.9918). Significant differences were observed in all the three immunoassay methods compared to the Variant HPLC (P<0.00001) and between the DCA2000+ and the Dimension RXL (P=0.0144), as well as between the DCA2000+ and the Cobas Integra (P=0.0247). We concluded that while HbA1c levels were undetected by some methods, other methods were able to measure HgbA1c with a high degree of accuracy. Therefore, we recommend that any affected HbA1c samples should be measured by two different methods.

Journal: International Journal of Diabetes in Developing Countries

Year of Publication: 2015

Publication issue: 35(4)

Page numbers: 392-399

SHORTLINK: bit.ly/1UyReSj

Title: Screening for genetic mutations in LDLR gene with familial hypercholesterolemia patients in the Saudi population

Author(s): Alharbi, K. K., Kashour, T. S., Al-Hussaini, W., Nbaheen, M. S., ... Khan, I. A. et al.

Affiliation: ^{1,3-4} King Saud University, Riyadh, Saudi Arabia; King Fahad Cardiac Center, King Saud University, Riyadh, Saudi Arabia; College of Medicine King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Familial hypercholesterolemia (FH) is caused by genetic defects involving the low density lipoprotein-receptor (LDL-R), predisposing affected people to premature atherosclerotic cardiovascular disease and death. The aim of the present study was to assess certain exons in the LDLR gene mutation detection analysis affecting in the Saudi population with FH. This case-control study was carried out with 200 subjects; 100 were FH cases and 100 were healthy controls. Five mL of venous blood samples were collected from all the subjects and used for biochemical and genetic analysis. DNA was extracted from 2 mL of the EDTA samples, and precise primers were designed for LDL-R gene which includes Exon 3, 4 and 8. PCR was followed by DNA sequencing. In our study, we found 25 mutations in cases in Exon-3 and 2 mutations in controls, however, we have found only 5 mutations in exon 4 and none of the mutations were identified in exon 8. We conclude that screening of FH among Saudi population is very important to identify individuals who are prone to develop the disease.

Journal: Acta Biochimica Polonica

Year of Publication: 2015

Publication issue: 62(3)

Page numbers: 559-562

SHORTLINK: [bit.ly /25LuJlj](http://bit.ly/25LuJlj)

Title: Child Neurology: Andersen-Tawil syndrome

Author(s): Almuqbil, M. & Srour, M.

Affiliation: Division of Pediatric Neurology, Montreal Children's Hospital-McGill University Health Center, Montreal, Canada; Division of Pediatric Neurology, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

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Journal: Neurology

Year of Publication: 2015

Publication issue: 84(11)

Page numbers: E78-E80

SHORTLINK: bit.ly/1OcO0Yk

Title: ISCA2 mutation causes infantile neurodegenerative mitochondrial disorder

Author(s): Al-Hassnan, Z. N., Al-Dosary, M., Alfadhel, M., Fageil, E. A., Alsoqob, M., et al.

Affiliation: ^{1,2} King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia; Genetics Division, King Saud bin Abdulaziz University for Health Science, Riyadh, Saudi Arabia; Children's Hospital, King Fahad Medical City, Riyadh, Saudi Arabia.

Abstract:

BACKGROUND: There are numerous nuclear genes that cause mitochondrial disorders and clinically and genetically heterogeneous disorders whose aetiology often remains unsolved. In this study, we aim to investigate an autosomal recessive syndrome causing leukodystrophy and neuroregression. We studied six patients from five unrelated consanguineous families.

METHODS: Patients underwent full neurological, radiological, genetic, metabolic and dysmorphological examinations. Exome sequencing coupled with autozygosity mapping, Sanger sequencing, microsatellite haplotyping, standard and molecular karyotyping and whole mitochondrial DNA sequencing were used to identify the genetic cause of the syndrome. Immunohistochemistry, transmission electron microscopy, confocal microscopy, dipstick assays, quantitative PCR, reverse transcription PCR and quantitative reverse transcription PCR were performed on different tissue samples from the patients.

RESULTS: We identified a homoallelic missense founder mutation in ISCA2 leading to mitochondrial depletion and reduced complex I activity as well as decreased ISCA2, ISCA1 and IBA57 expression in fibroblasts. MRI indicated similar white matter abnormalities in the patients. Histological examination of the skeletal muscle showed mild to moderate variation in myofibre size and the presence of many randomly distributed atrophic fibres.

CONCLUSIONS: Our data demonstrate that ISCA2 deficiency leads to a hereditary mitochondrial neurodegenerative white matter disease in infancy.

Journal: Journal of Medical Genetics

Year of Publication: 2015

Publication issue: 52(3)

Page numbers: 186-194

SHORTLINK: bit.ly/1XCSE5m

Title: DOCK8 Deficiency: Clinical and Immunological Phenotype and Treatment Options - a Review of 136 Patients

Author(s): Aydin, S. E., Kilic, S. S., Aytakin, S. S., Kumar, A., ... Al-Zahrani, D., et al.

Affiliation: Ludwig-Maximilians-University, Munich, Germany, Uludag University, Bursa, Turkey; Dr. Sami Ulus Maternity and Children's Health and Diseases Training and Research Hospital, Ankara, Turkey; Cincinnati Children's Hospital, Cincinnati, USA; King Saud Bin Abdulaziz University for Health Sciences and Department of Pediatrics, King Abdulaziz Medical City, Jeddah, Saudi Arabia; et al.

Abstract:

Mutations in DOCK8 result in autosomal recessive Hyper-IgE syndrome with combined immunodeficiency (CID). However, the natural course of disease, long-term prognosis, and optimal therapeutic management have not yet been clearly defined. In an international retrospective survey of patients with DOCK8 mutations, focused on clinical presentation and therapeutic measures, a total of 136 patients with a median follow-up of 11.3 years (1.3-47.7) spanning 1693 patient years, were enrolled. Eczema, recurrent respiratory tract infections, allergies, abscesses, viral infections and mucocutaneous candidiasis were the most frequent clinical manifestations. Overall survival probability in this cohort [censored for hematopoietic stem cell transplantation (HSCT)] was 87 % at 10, 47 % at 20, and 33 % at 30 years of age, respectively. Event free survival was 44, 18 and 4 % at the same time points if events were defined as death, life-threatening infections, malignancy or cerebral complications such as CNS vasculitis or stroke. Malignancy was diagnosed in 23/136 (17 %) patients (11 hematological and 9 epithelial cancers, 5 other malignancies) at a median age of 12 years. Eight of these patients died from cancer. Severe, life-threatening infections were observed in 79/136 (58 %); severe non-infectious cerebral events occurred in 14/136 (10 %). Therapeutic measures included antiviral and antibacterial prophylaxis, immunoglobulin replacement and HSCT. This study provides a comprehensive evaluation of the clinical phenotype of DOCK8 deficiency in the largest cohort reported so far and demonstrates the severity of the disease with relatively poor prognosis. Early HSCT should be strongly considered as a potential curative measure.

Journal: Journal of Clinical Immunology

Year of Publication: 2015

Publication issue: 35(2)

Page numbers: 189-198

SHORTLINK: bit.ly/1X9Li8G

Title: New Paradigm for the Treatment of Glucose Transporter 1 Deficiency Syndrome: Low Glycemic Index Diet and Modified High Amylopectin Cornstarch

Author(s): Almuqbil, M., Go, C., Nagy, L. L., Pai, N., Mamak, E., et al.

Affiliation: Department of Pediatrics, University of Toronto; Division of Pediatric Neurology, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; ³⁻⁴ Department of Pediatrics, University of Toronto, Department of Psychology, University of Toronto, Hospital for Sick Children, Toronto, Canada.

Abstract:

OBJECTIVE: Glucose transporter 1 deficiency syndrome is an autosomal, dominantly inherited neurometabolic disorder caused by mutations in the SLC2A1 gene. Decreased glucose transport into the brain results in seizures and cognitive dysfunction. The ketogenic diet is the treatment of choice, but complicated with compliance problems. Stabilization of blood glucose levels by low glycemic index diet and modified high amylopectin cornstarch would provide steady-state glucose transport into the brain to prevent seizures and cognitive dysfunction in patients with glucose transporter 1 deficiency syndrome as an alternative treatment.

PATIENT: We report a new glucose transporter 1 deficiency syndrome patient (c.988C>T; p. Arg330X in the SLC2A1) treated with modified high amylopectin cornstarch (Glycosade) and low glycemic index diet because of compliance problems with the ketogenic diet. She was diagnosed at 11.5 years of age and was treated with the ketogenic diet between ages 12 and 18 years.

RESULTS: She was started on modified high amylopectin cornstarch at bedtime and low glycemic index diet with meals and snacks every 3-4 hours. Within the first 6 months of therapy, she improved in her seizures and cognitive functions, but experienced compliance problems afterwards. Neuropsychological assessment was stable at 12 months of therapy.

CONCLUSION: This diet was easy to apply compared with the ketogenic diet and resulted in stable neuropsychological functioning of this glucose transporter 1 deficiency syndrome patient. Modified high amylopectin cornstarch and low glycemic index diet might be an alternative treatment in glucose transporter 1 deficiency syndrome patients with compliance problems to the ketogenic diet treatment, but additional patients should be treated to prove usefulness of this new treatment.

Journal: Pediatric Neurology

Year of Publication: 2015

Publication issue: 53(3)

Page numbers: 243-246

SHORTLINK: bit.ly/1UyRdhs

Title: Significant Transplantation-Related Mortality from Respiratory Virus Infections within the First One Hundred Days in Children after Hematopoietic Stem Cell Transplantation

Author(s): Hutspardol, S., Essa, M., Richardson, S., Schechter, T., Ali, M., et al.

Affiliation: ^{1,3-4}Hospital for Sick Children, University of Toronto, Canada; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Respiratory viral infections (RVI) are important in hematopoietic stem cell transplantations (HSCT) and knowledge regarding incidence, morbidity, mortality, and long-term pulmonary complications is limited. We report a study to evaluate incidence and outcomes, both short and long-term, of RVI in children receiving HSCT. Between January 2000 and December 2012, 844 patients underwent hematopoietic stem cell transplantation (HSCT) at the Hospital for Sick Children: 491 were allogeneic and 353 were autologous. When screening for causes of death in the first year after HSCT in the 844 patients, we found that RVI as a cause of death was only evident in the first 100 days after HSCT. Fifty-four (6.5%) patients were found to have an RVI within the first 100 days after HSCT (allogeneic = 32, autologous = 22). Upper and lower respiratory tract infections were documented in 31 (57%) and 23 (43%) patients, respectively. Viruses were parainfluenza (35%), respiratory syncytial virus (28%), influenza (22%), adenovirus (7%), human metapneumovirus (4%), coronavirus (2%), and rhinovirus (2%). Three patients relapsed with their primary disease before day 100 and were excluded. The overall mortality for the remaining 51 patients was 10% (allogeneic = 4, autologous = 1). All 5 deaths were directly attributable to RVI and all 5 deaths occurred in patients with a lower respiratory tract infection. The remaining patients were followed for a median of 4.3 years (range, 1.4 to 11.8) and no chronic pulmonary complications were observed. A clear seasonal pattern for contracting RVI was evident with 65% of total RVI occurring between October and March (35 of 427 versus 19 of 417, $P = .03$). Given the significant mortality from RVI and the challenges in preventing them, choosing the time to start HSCT, whenever possible, may help prevent RVI and improve outcomes.

Journal: Biology of Blood and Marrow Transplantation

Year of Publication: 2015

Publication issue:

Page numbers:

SHORTLINK: bit.ly/24yjH6

Title: Low frequency of ETV6-RUNX1 (t 12; 21) in Saudi Arabian Pediatric Acute Lymphoblastic Patients: Association with clinical parameters and early remission

Author(s): Aljamaan, K., Aljumah, T.K., Aloraibi, S., Absa, M., & Iqbal, Z.

Affiliation: ¹⁻² Division of Pediatric Hematology/Oncology Department of Oncology; Medical Genetics / Hematology & Oncology, CLS, CoAMS and CoAMS; Hematology, Oncology and Pharmacogenetic Engg Sciences Group, University of the Punjab, Lahore, Pakistan; Clinical Laboratory Sciences, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Background: Pediatric acute lymphoblastic leukemia (pALL) patients at King Abdulaziz Medical City represent a pure Saudi Arabian population. ETV6-RUNX1 positive pALL patients have good prognosis as compared to ETV6-RUNX1 negative counterparts. Therefore, frequencies of these two patient groups have a huge consideration in treatment strategies of pALL in a given population. Different geographical locations have been reported to have different frequencies of ETV6-RUNX1 ranging from 10% in Southeast Asia to 30% in Australia. Aim: Therefore, the objective of this study was to establish the ETV6-RUNX1 status of Saudi Arabian pALL patients and its association with clinical parameters and early remission. Materials and Methods: Clinical parameters and ETV6-RUNX1 status (using FISH technique) of pALL patients attending the Pediatric Oncology Clinic, King Abdulaziz Medical City, Riyadh from 2006 to 2011 were studied. Comparisons between ETV6-RUNX1 positive and negative groups were accomplished using chi-square test or Fisher's exact test. All statistical analyses were performed using SAS version 9.2 (SAS Institute, Inc., Cary, NC). Results: Out of 54 patients, 33 were male and 21 were females (ratio 1.57:1). B- and T-cell lineages were found in 47 (87%) and 7 (13%) patients respectively. Only 5 (9.3%) patients were ETV6-RUNX1 positive while 49(80.7%) were ETV6-RUNX1 negative. All ETV6-RUNX1 patients (100%) were of B-cell lineage and 80% (4/5) were in the 3-7 year age group. None of the ETV6-RUNX1 patients had $\geq 5\%$ blasts (no remission) at day 14 as compared with 9% in the ETV6-RUNX1 negative group (Figure 1). Conclusions: Frequency of ETV6-RUNX1 positive patients (less than 10%) in our pALL patients is much lower than reported for most European countries, North America, Australia and Japan while it is in accordance with ETV6-RUNX1 frequencies from Egypt (11.6%), Pakistan (10%), Spain (2%) and India (5-7%). This shows ethnic differences in genetics of pALL as well as higher frequencies of ETV6-RUNX1 positive pALL mostly in more industrialized countries, probably due to some industrial pollutants or westernized lifestyle.

Journal: Asian Pacific Journal of Cancer Prevention

Year of Publication: 2015

Publication issue: 16(17)

Page numbers: 7523-7527

SHORTLINK: bit.ly/1WEjJEI

Title: Minimally invasive surgical approach to treat posterior urethral diverticulum

Author(s): Alsowayan, O., Almodhen, F., & Alshammari, A.

Affiliation: ¹⁻³ Department of Surgery, Division of Pediatric Urology, King Saud bin Abdul Aziz University for Health Sciences, King Abdul Aziz Medical City, Riyadh, Saudi Arabia.

Abstract:

Urethral diverticulum is a localized saccular or fusiform out-pouching of the urethra. It may occur at any point along the urethra in both male and females. Male urethral diverticulum is rare, and could be either congenital or acquired, anterior or posterior. The mainstay treatment of posterior urethral diverticulum (PUD) is the open surgical approach. Here we discuss our minimally invasive surgical approach (MIS) in managing posterior urethral diverticulum.

Journal: Urology Annals

Year of Publication: 2015

Publication issue: 7(2)

Page numbers: 273-276

SHORTLINK: bit.ly/1rcyxfR

Title: Extra corporeal membrane oxygenation in acute respiratory distress syndrome

Author(s): Karthika, M., Al Enezi, F., Pillay, L. V., Al Qahtani, S. & Al Solamy, S.

Affiliation: Symbiosis International University, Pune, India; ^{2,4-5}King Saud bin Abdul Aziz University for Health Sciences, Riyadh, Saudi Arabia; Aundh University of Medical Sciences, Pune, India.

Abstract:

A young female presented with pneumonitis and worsened acute respiratory distress syndrome (ARDS) failed all the conservative ventilator management, was managed with extra corporeal life support technology, and was successfully discharged.

Journal: Middle East Journal of Anesthesiology

Year of Publication: 2015

Publication issue: 23(3)

Page numbers: 367-370

SHORTLINK: bit.ly/1tgID2j

Title: Prevalence and Risk Factors of Helicobacter pylori Infection in Saudi Children: A Three-Year Prospective Controlled Study

Author(s): Hasosah, M., Satti, M., Shehzard, A., Alsaifi, A., Sukkar, G., et al.

Affiliation:^{1, 3-5} Pediatric Gastroenterology Department, King Saud Bin Abdulaziz University for Health Sciences, National Guard Hospital, Jeddah, Saudi Arabia; Pathology Department, King Saud Bin Abdulaziz University for Health Sciences, National Guard Hospital, Jeddah, Saudi Arabia; et al.

Abstract:

BACKGROUND: Helicobacter pylori (H. pylori) infection is the most common chronic infections. The risk factors for H. pylori infection in both developing and developed countries are closely related to poor living conditions in childhood. This study aimed to establish the prevalence of H. pylori infection and its associated risk factors among children in the western and central regions of Saudi Arabia.

METHODS: A prospective cross-sectional study was performed among symptomatic children in National Guard hospitals who underwent esophagogastroduodenoscopy from 2010 to 2013. The gold standard diagnosis of H. pylori infection was histologic presence of the bacteria in the gastric biopsy. The variables analyzed as possible risk factors included demographic and living characteristics, socioeconomic status, potential mode of transmission, and clinical indications of H. pylori infection.

RESULTS: A total of 303 children were included in the study. The overall prevalence of H. pylori infection was 49.8%. Among the studied variables, the following were positively associated with the presence of H. pylori in multivariable analyses: age above 10 years (OR = 11.84, 95% CI = 3.90-35.94, $p < .0001$), an income of <5000 SR (OR = 2.06, 95% CI = 1.07-3.95), more than eight persons in the household (OR = 3.46, 95% CI = 1.67-7.20), bed sharing (OR = 2.26, 95% CI = 1.32-3.86), and two affected parents (OR = 11.19, 95% CI = 1.29-97.27). Abdominal pain and anorexia were significant predictors of H. pylori infection ($p = .005$ and $.009$, respectively).

CONCLUSION: Helicobacter pylori infection had a high prevalence among Saudi children in the cities of Jeddah and Riyadh. It was a relatively common cause of abdominal pain and anorexia. In this cohort of children, H. pylori infection was associated with variables indicative of a crowded environment and poor living conditions, further supporting the conclusion that improving socioeconomic conditions and designing a preventive health strategy in Saudi Arabia will likely protect children against this infection.

Journal: Helicobacter

Year of Publication: 2015

Publication issue: 20(1):

Page numbers: 56-63

SHORTLINK: bit.ly/1TYkd8d

Title: Implications of external price referencing of pharmaceuticals in Middle East countries

Author(s): Kaló, Z., Alabbadi, I., Al-Ahdab, O. G., Alowayyesh, M., ... Al-Saqqabi, A. H., et al.

Affiliation: Eötvös Loránd University, Budapest, Hungary; University of Jordan, Amman, Jordan; Ministry of Health, Abu Dhabi, UAE; Kuwait University, Yarmook, Kuwait; King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia, et al.

Abstract:

INTRODUCTION: External price referencing (EPR) is applied frequently to control pharmaceutical prices. Our objective was to analyse how EPR is used in Middle Eastern (ME) countries and to compare the price corridor for original pharmaceuticals to non-pharmaceutical services not subjected to EPR.

METHODS: We conducted a survey on EPR regulations and collected prices of 16 patented pharmaceuticals and 14 non-pharmaceutical services in seven Middle Eastern (ME) countries. Maximum and minimum prices of each pharmaceutical and non-pharmaceutical technology were compared to mean prices in the countries studied by using market exchange rates. Influencing factors of pharmaceutical prices were assessed by multivariate linear regression analysis.

RESULTS: The average price corridor is narrower for pharmaceuticals (-39.8%; +35.9%) than for outpatient and hospital services (-81.7%; +96.3%).

CONCLUSION: Our analysis revealed the importance of population size and EPR implementation on drug price levels; however, EPR results in higher pharmaceutical prices in lower-income countries compared to non-pharmaceutical services.

Journal: Expert Review of Pharmacoeconomics & Outcomes Research

Year of Publication: 2015

Publication issue: 15(6)

Page numbers: 993-998

SHORTLINK: bit.ly/1TUUYaZ

Title: Comparison of Aerosol Delivery by Face Mask and Tracheostomy Collar

Author(s): Bugis, A. A., Sheard, M. M., Fink, J. B., Harwood, R. J. & Ari, A.

Affiliation: Division of Respiratory Care, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Division of Respiratory Therapy, Georgia State University, Atlanta, Georgia; Division of Respiratory Therapy, Georgia State University, Atlanta, Georgia; LLC, San Mateo, California.

Abstract:

BACKGROUND: The purpose of this study was to compare the performance of a tracheostomy collar, Wright mask, and aerosol mask attached to a jet nebulizer in facilitating aerosolized medication delivery to the lungs. We also compared albuterol delivery with open versus closed fenestration and determined the effect of inspiratory-expiratory ratio (I:E) on aerosol delivery.

METHODS: Albuterol (2.5 mg/3 mL) was administered to an in vitro model consisting of an adult teaching mannequin extrathoracic and upper airway with stoma intubated with an 8-mm fenestrated tracheostomy tube. The cuff was deflated. A collecting filter at the level of the bronchi was connected to a breathing simulator at a tidal volume of 400 mL, breathing frequency of 20 breaths/min, and I:E of 2:1 and 1:2. A jet nebulizer was operated with O₂ at 8 L/min. Each interface was tested in triplicate. The flow was discontinued at the end of nebulization. For each test, the nebulizer was attached to a tracheostomy collar with the fenestration open or closed, a Wright mask, or an aerosol mask. Drug was analyzed by spectrophotometry (276 nm). A paired t test and analysis of variance were performed (P < .05).

RESULTS: The mean \pm SD percent albuterol dose delivered distal to the bronchi was greater with the tracheostomy collar with a closed fenestration ($9.4 \pm 1.5\%$) compared with an open fenestration ($7.0 \pm 0.8\%$). The doses delivered with the Wright mask ($4.1 \pm 0.6\%$) and aerosol mask ($3.5 \pm 0.04\%$) were both less than with the tracheostomy collar under either condition (P < .05). Increasing the I:E from 1:2 to 2:1 increased aerosol delivery by 2.5-4%, with significance for the tracheostomy collar with an open fenestration ($11.6 \pm 1.4\%$), Wright mask ($7.2 \pm 0.6\%$), and aerosol mask ($6.1 \pm 0.5\%$).

CONCLUSIONS: In an adult tracheostomy model, the tracheostomy collar delivered more aerosol to the bronchi than the Wright or aerosol mask. An I:E of 2:1 caused greater aerosol deposition compared with an I:E of 1:2. During aerosol administration via a tracheostomy collar, closing the fenestration improved aerosol delivery.

Journal: Respiratory Care

Year of Publication: 2015

Publication issue: 60(9)

Page numbers: 1220-1226

SHORTLINK: bit.ly/1UEbwwL

Title: Ligand-based modeling followed by in vitro bioassay yielded new potent glucokinase activators

Author(s): Taha, M. O., Habash, M., Hatmal, M. M., Abdelazeem, A. H. & Qandil, A.

Affiliation: University of Jordan, Amman, Jordan; Applied Science University, Amman, Jordan; The Hashemite University, Zarqa, Jordan; Beni-Suef University, Beni-Suef, Egypt; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Glucokinase (GK) has received recent interest as a valid antidiabetic target. With this in mind, we applied a computational workflow based on combining pharmacophore modeling and QSAR analysis followed by in silico screening toward the discovery of novel GK activators. Virtual screening identified 10 promising bioactivators from the National Cancer Institute list of compounds. The most potent NCI hit illustrated 6.3-fold GK activation at 10 μ M. These results demonstrated that our virtual screening protocol was able to identify novel GK activator leads for subsequent development into potential antidiabetic agents.

Journal: Journal of Molecular Graphics & Modelling

Year of Publication: 2015

Publication issue: 56

Page numbers: 91-102

SHORTLINK: bit.ly/1UohWNG

Title: Exploring quality of life among renal and liver transplant recipients

Author(s): Alkatheri, A., Al Bekairy, A., Alburuz, S., Qandil, A., Khalidi, N., et al.

Affiliation: ¹⁻⁵ College of Pharmacy, King Saud Bin Abdulaziz University for Health Sciences, National Guard Health Affairs, National Guard Road, Riyadh, Saudi Arabia; et al.

Abstract:

BACKGROUND AND OBJECTIVES: Despite the worldwide recognition of the importance of quality of life (QOL) assessment, research data on QOL for renal and liver transplant recipients are limited. The main objective of this study was to explore and compare QOL in renal and liver transplant patients.

DESIGN AND SETTING: This cross-sectional study was conducted at at King Abdulaziz Medical City, Saudi Arabia.

PATIENTS AND METHODS: Saudis 16 years of age or more who received liver or renal transplantation at least three months before the study participated. QOL was evaluated using the World Health Organization QOL instrument (WHOQOL-BREF).

RESULTS: Renal and liver transplant patients were highly or moderately satisfied with most circumstances of life. Using data for subjects in all WHO centers, renal and liver transplant patients domain scores in this study were significantly higher in the psychological health domain, social relations and environmental domain ($P < .0001$). The results also show that renal and liver transplant recipients who were male, or had higher education or who were employed had higher QOL scores.

CONCLUSIONS: This study found that both renal and liver transplant recipients achieved very high QOL domain scores as compared with international data. Lower QOL was significantly associated with social disadvantages, suggesting that these patients may require more focused attention and counselling following transplantation.

Journal: Annals of Saudi Medicine

Year of Publication: 2015

Publication issue: 35(5)

Page numbers: 368-376

SHORTLINK: bit.ly/1YdUmcc

Title: Assessment of sub-chronic, hematological and histopathological toxicities of a herbal combination

Author(s): Ahmed, S., Khan, R. A. & Feroz, Z.

Affiliation: ¹⁻² Faculty of Pharmacy, University of Karachi, Karachi, Pakistan; College of Science and Health Profession, King Saud bin Abdulaziz University for Health Sciences, Riyadh, KSA.

Abstract:

The herbal combination under study consists of *Withania somnifera*, *Tribulus terrestris*, *Mucuna pruriens* and *Argyria speciosa*. Present study is mainly designed to investigate the gross physical, sub-chronic, hematological and histopathological effects of the combination widely used for its stimulating, revitalizing and fertility boosting effects in Pakistan. Sub-chronic, hematological and histopathological outcomes of herbal combination were assessed on 27 albino rabbits weighing from 1000 gm-1500 gm after giving herbal combination for 60 days in two doses 27 and 81 mg/kg against control. No significant toxicity was revealed during the entire period of study, however some biochemical changes were observed in kidney and liver but these changes did not coincide with histopathological findings. There was no mortality and evidence of systemic toxicity including hematological toxicity following 60 days administration of herbal combination. Results of present study suggest that further studies are required on large number of animals before reaching to a definite conclusion, more over clinical studies should also be conducted to confirm the possible toxic effects of the herbal combination.

Journal: Pakistan Journal of Pharmaceutical Sciences

Year of publication: 2015

Volume: 28(6)

Page numbers: 2153-2160

SHORTLINK: bit.ly/1OcO0rp

Title: Pharmacological ins and outs of medicinal plants against *Helicobacter pylori*: A review

Author(s): Zaidi, S. F., Muhammad, J. S., Usmanghani, K. & Sugiyama, T.

Affiliation: College of Medicine, King Saud bin Abdulaziz University of Health Sciences, Jeddah, Saudi Arabia; ^{2,4} Graduate School of Medicine and Pharmaceutical Sciences, University of Toyama, Japan; Faculty of Pharmacy, Jinnah University for Women, Karachi, Pakistan.

Abstract:

Since *Helicobacter pylori* was discovered in 1980, it has been considered as a major cause in the pathogenesis of gastric ulcer, mucosa-associated lymphoid tissue (MALT) lymphomas, and gastric cancer. Eventually antibiotics were designed to eradicate this bacterium, which not only prevent peptic ulcer recurrence but also decrease the chances of developing gastric cancer. Propitious consequences of these antibiotic regimens and better hygienic conditions, particularly in developed countries, resulted in significant decline in the prevalence of *H. pylori* infection. However, persistent high *H. pylori* infection in developing countries, decreased patient compliance and emerging antibiotic resistance forced researchers to quest for novel candidates. Herbal medicines have always served as a leading source in drug discovery. Since time immemorial, herbs have been used to treat various disorders covering from minor illnesses as pain to life threatening conditions like cancer. Ample amount of studies from different parts of the world have shown promising activities of medicinal herbs not only against *H. pylori* but also associated disorders while employing in vitro, in vivo and clinical studies. In this review, these multiple pharmacological effects of medicinal plants and their chemical constituents will be discussed in relation to *H. pylori* not only to scientifically evaluate the beneficial effects of these medicinal plants but to also critically analyze their plausible role as chemo preventive agents against *H. pylori*-associated disorders.

Journal: Pakistan Journal of Pharmaceutical Sciences

Year of publication: 2015

Volume: 28(3)

Page numbers: 1171-1176

SHORTLINK: bit.ly/1UEbODG

Title: Identification and Testing of Novel CARP-1 Functional Mimetic Compounds as Inhibitors of Non-Small Cell Lung and Triple Negative Breast Cancers

Author(s): Munthu, M., Somagoni, J., Cheriyan, V. T., Muni, S., ... Yassin, B. et al.

Affiliation: ^{1,3-4} Wayne State University, USA; Florida A&M University, Tallahassee, USA; College of Pharmacy, King Saud bin Abdulaziz University for Health Sciences, National Guard Health Affairs, Riyadh, Saudi Arabia; et al.

Abstract:

The triple negative breast cancer (TNBCs) and non-small cell lung cancers (NSCLCs) often acquire mutations that contribute to failure of drugs in clinic and poor prognosis, thus presenting an urgent need to develop new and improved therapeutic modalities. Here we report that CARP-1 functional mimetic (CFMs) compounds 4 and 5, and 4.6, a structurally related analog of CFM-4, are potent inhibitors of TNBC and NSCLC cells in vitro. Cell growth suppression by CFM-4 and -4.6 involved interaction and elevated expression of CARP-1/CCAR1 and Death Effector Domain (DED) containing DNA binding (DEDD)2 proteins. Apoptosis by these compounds also involved activation of pro-apoptotic stress-activated kinases p38 and JNK1/2, cleavage of PARP and loss of mitotic cyclin B1. Both the CFMs inhibited abilities of NSCLC and TNBC cells to migrate, invade, and form colonies in suspension, while disrupting tubule formation by the human umbilical vein endothelial cells (HUVECs). Nano-lipid formulation of CFM-4 (CFM-4 NLF) enhanced its serum bioavailability when compared with the free CFM-4. Oral administration of CFM-4 NLF reduced weights and volume of the xenografted tumors derived from A549 NSCLC and MDA-MB-231 TNBC cells. Although no gross tissue or histological toxicities were noticed, the immunohistochemical analysis revealed increased CARP-1 and DNA fragmentation in tumors of the CFM-4 NLF-treated animals. In conclusion, while stimulation of pro-apoptotic CARP-1 and DEDD2 expression and their binding underscore a novel mechanism of apoptosis transduction by CFM compounds, our proof-of-concept xenograft studies demonstrate therapeutic potential of CFM-4 for TNBC and NSCLC.

Journal: Journal of Biomedical Nanotechnology

Year of publication: 2015

Volume: 11(9)

Page numbers: 1608-1627

SHORTLINK: bit.ly/1UEbmp8

Title: The prevalence of psychological impact on caregivers of hospitalized patients: The forgotten part of the equation

Author(s): Al-Zahrani, R., Bashihab, R., Ahmed, A. E., Alkhodair, R. & Al-Khateeb, S.

Affiliation: College of Medicine, Al-Imam Muhammad Ibn Saud Islamic University, Riyadh, Saudi Arabia; College of Public Health and Health Informatics, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Division of Urology, King Abdulaziz Medical City, Riyadh, Saudi Arabia.

Abstract:

Introduction: Despite the large number of caregivers suffering from various psychiatric disorders, research on psychological symptoms among caregivers of hospitalized patients is lacking in Saudi populations.

Objectives: The objective of this study is to determine the prevalence of depression, anxiety and stress among caregivers of hospitalized Saudi patients.

Methods: A cross-sectional study of depression, anxiety and stress among caregivers of hospitalized patients was conducted. Arabic speaking caregivers (n ¼ 353) between the ages of 14 and 80 years were included in the study. The Depression Anxiety Stress Scales (DASS-21) test (Arabic version) was used to measure the three psychological symptoms.

Results: The study has shown high rates of depression, anxiety and stress among caregivers (72.8%, 76.5%, and 61.5%, respectively). Depression was found to be associated with long-term hospital stay (81.4% vs. 69.3%; p-value ¼ 0.021) and family caregivers (75.4% vs. 46.9%, p-value ¼ 0.001). Anxiety was found to be associated with family caregivers (78.8% vs. 53.1%; p-value ¼ 0.001). The three psychological symptoms were higher among those with an age above 20 years old (p-value ,0.05). Multivariate logistic models show the risk of the psychological symptoms increased with low-income, higher education, immediate relation to the patient, and older caregivers.

Conclusions: The findings suggest that the prevalence of depression, anxiety and stress symptoms were very common among caregivers. The results showed that approximately 8 out of 10 caregivers suffer from at least one psychiatric disorder. Older, low socioeconomic status, and well-educated caregivers were identified as being at higher risk of developing psychiatric symptoms.

Journal: Qatar Medical Journal

Year of Publication: 2015

Publication issue: 2015(1)

Page numbers: -

SHORTLINK: bit.ly/1rczapy

Title: Association of Online Health Information-Seeking Behavior and Self-Care Activities Among Type 2 Diabetic Patients in Saudi Arabia

Author(s): Jamal, A., Khan, S. A., AlHumud, A., Al-Duhyim, A., ... Househ, M., et al.

Affiliation: Medical Education Department, King Saud University, Riyadh, Saudi Arabia; College of Medicine, King Saud University, Riyadh, Saudi Arabia; College of Public Health and Health Informatics, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Background: Health information obtained from the Internet has an impact on patient health care outcomes. There is a growing concern over the quality of online health information sources used by diabetic patients because little is known about their health information-seeking behavior and the impact this behavior has on their diabetes-related self-care, in particular in the Middle East setting. **Objective:** The aim of this study was to determine the online health-related information-seeking behavior among adult type 2 diabetic patients in the Middle East and the impact of their online health-related information-seeking behavior on their self-care activities.

Methods: A cross-sectional survey was conducted on 344 patients with type 2 diabetes attending inpatient and outpatient primary health care clinics at 2 teaching hospitals in Riyadh, Saudi Arabia. The main outcome measures included the ability of patients to access the Internet, their ability to use the Internet to search for health-related information, and their responses to Internet searches in relation to their self-care activities. Further analysis of differences based on age, gender, sociodemographic, and diabetes-related self-care activities among online health-related information seekers and nononline health-related information seekers was conducted.

Results: Among the 344 patients, 74.1% (255/344) were male with a mean age of 53.5 (SD 13.8) years. Only 39.0% (134/344) were Internet users; 71.6% (96/134) of them used the Internet for seeking health-related information. Most participants reported that their primary source of health-related information was their physician (216/344, 62.8%) followed by television (155/344, 45.1%), family (113/344, 32.8%), newspapers (100/344, 29.1%), and the Internet (96/344, 27.9%)...

Journal: Journal of Medical Internet Research

Year of Publication: 2015

Publication issue: 17(8)

SHORTLINK: bit.ly/1YdUuZt

Title: How Robust Can a Machine Learning Approach Be for Classifying Encrypted VoIP?

Author(s): Alshammari, R. & Zincir-Heywood A. N.

Affiliation: College of Public Health and Health Informatics, King Saud Bin Abdulaziz University for Health Sciences, Riyadh; Saudi Arabia; Faculty of Computer Science, Dalhousie University, Halifax, Canada.

Abstract:

The classification of encrypted network traffic represents an important issue for network management and security tasks including quality of service, firewall enforcement, and security. Traffic classification becomes more challenging since the traditional techniques, such as port numbers or Deep Packet Inspection, are ineffective against Peer-to-Peer Voice over Internet Protocol (VoIP) applications, which used non-standard ports and encryption. Moreover, traffic classification also represents a particularly challenging application domain for machine learning (ML). Solutions should ideally be both simple—therefore efficient to deploy—and accurate. Recent advances in ML provide the opportunity to decompose the original problem into a subset of classifiers with non-overlapping behaviors, in effect providing further insight into the problem domain and increasing the throughput of solutions. In this work, we investigate the robustness of an ML approach to classify encrypted traffic on not only different network traffic but also against evasion attacks. Our ML based approach only employs statistical network traffic flow features without using the Internet Protocol addresses, source/destination ports, and payload information to unveil encrypted VoIP applications in network traffic. What we mean by robust signatures is that the signatures learned by training on one network are still valid when they are applied to traffic coming from totally different locations, networks, time periods, and also against evasion attacks. The results on different network traces, as well as on the evasion of a Skype classifier, demonstrate that the performance of the signatures are very promising, which implies that the statistical information based on the network layer with the use of ML can achieve high classification accuracy and produce robust signatures.

Journal: Journal of Network and Systems Management

Year of Publication: 2015

Publication issue: 23(4)

Page numbers: 830-869

SHORTLINK: bit.ly/21718iS

Title: Identification of VoIP encrypted traffic using a machine learning approach

Author(s): Alshammari, R. & Zincir-Heywood A. N.

Affiliation: College of Public Health and Health Informatics, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Faculty of Computer Science, Dalhousie University, Halifax, Nova Scotia, Canada.

Abstract:

We investigate the performance of three different machine learning algorithms, namely C5.0, AdaBoost and Genetic programming (GP), to generate robust classifiers for identifying VoIP encrypted traffic. To this end, a novel approach (Alshammari and Zincir-Heywood, 2011) based on machine learning is employed to generate robust signatures for classifying VoIP encrypted traffic.

We apply statistical calculation on network flows to extract a feature set without including payload information, and information based on the source and destination of ports number and IP addresses. Our results show that finding and employing the most suitable sampling and machine learning technique can improve the performance of classifying VoIP significantly.

Journal: Journal of King Saud University - Computer and Information Sciences

Year of Publication: 2015

Publication issue: 27(1)

Page numbers: 77-92

SHORTLINK: bit.ly/1X9Mg4T

Title: Discovering diabetes complications: An ontology based model

Author(s): Daghistani, T., Shammari, R. A. & Razzak, M. I.

Affiliation: College of Public Health and Health Informatics, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Background: Diabetes is a serious disease that spread in the world dramatically. The diabetes patient has an average of risk to experience complications. Take advantage of recorded information to build ontology as information technology solution will help to predict patients who have average of risk level with certain complication. It is helpful to search and present patient's history regarding different risk factors. Discovering diabetes complications could be useful to prevent or delay the complications.

Method: We designed ontology based model, using adult diabetes patients' data, to discover the rules of diabetes with its complications in disease to disease relationship.

Result: Various rules between different risk factors of diabetes Patients and certain complications generated. Furthermore, new complications (diseases) might be discovered as new finding of this study, discovering diabetes complications could be useful to prevent or delay the complications.

Conclusion: The system can identify the patients who are suffering from certain risk factors such as high body mass index (obesity) and starting controlling and maintaining plan.

Journal: Acta Informatica Medica

Year of Publication: 2015

Publication issue: 23(6)

Page numbers: 385-392

SHORTLINK: bit.ly/1Y8cxjh

Title: Multilevel fusion for fast online signature recognition using multi-section VQ and time modelling

Author(s): Razzak, M. I. & Alhaqbani, B.

Affiliation: ¹⁻² College of Public Health and Health Informatics, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Signature recognition is one of the most important biometrics authentication methods, is an integral part of current business activities, and is considered a noninvasive and non-threatening process. This paper presents an online signature verification system using multi-section VQ. We have used multi-section codebooks for signature recognition by splitting the signature into several sections with every section having its own codebook. The final result is based on the score level fusion of the results of each codebook. Moreover, multilevel fusion is performed in this trial to improve the accuracy. We have used SVC database that contains skilled forgery samples. Our experimental results on SVC database have shown 100 % accuracy with 0.003 EER.

Journal: Neural Computing & Applications

Year of Publication: 2015

Publication issue: 26(5)

Page numbers: 1117-1127

SHORTLINK: bit.ly/1t7ShTc

Title: The use of an adapted Health IT Usability Evaluation Model (Health-ITUEM) for evaluating consumer reported ratings of diabetes mHealth applications: Implications for diabetes care and management

Author(s): Househ, M. S., Shubair, M. M., Yunus, F., Jamal, A. & Aldossari, B.

Affiliation: ^{1,5} College of Public Health and Health Informatics, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; University of Northern British Columbia, Canada; UAE University, United Arab Emirates; King Saud University, Riyadh, Saudi Arabia.

Abstract:

Background: The aim of this paper is to present a usability analysis of the consumer ratings of key diabetes mHealth applications using an adapted Health IT Usability Evaluation Model (Health-ITUEM). **Methods:** A qualitative content analysis method was used to analyze publicly available consumer reported data posted on the Android Market and Google Play for four leading diabetes mHealth applications. Health-ITUEM concepts including information needs, flexibility/customizability, learnability, performance speed, and competency guided the categorization and analysis of the data. Health impact was an additional category that was included in the study. A total of 405 consumers' ratings collected from January 9, 2014 to February 17, 2014 were included in the study. **Results:** Overall, the consumers' ratings of the leading diabetes mHealth applications for both usability and health impacts were positive. The performance speed of the mHealth application and the information needs of the consumers were the primary usability factors impacting the use of the diabetes mHealth applications. There was also evidence on the positive health impacts of such applications. **Conclusions:** Consumers are more likely to use diabetes related mHealth applications that perform well and meet their information needs. Furthermore, there is preliminary evidence that diabetes mHealth applications can have positive impact on the health of patients.

Journal: Acta Informatica Medica

Year of Publication: 2015

Publication issue: 23(5)

Page numbers: 290-295

SHORTLINK: bit.ly/1UEdbSN

Title: Automatic Detection of Malarial Parasite Using Microscopic Blood Images

Author(s): Razzak, M. I. & Alhaqbani, B.

Affiliation: College of Public Health and Health Informatics, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; King Saud bin Abdulaziz University for Health Sciences, Ar Riyā , Saudi Arabia.

Abstract:

Background: The aim of this paper is to present a usability analysis of the consumer ratings of key diabetes mHealth applications using an adapted Health IT Usability Evaluation Model (Health-ITUEM).

Methods: A qualitative content analysis method was used to analyze publicly available consumer reported data posted on the Android Market and Google Play for four leading diabetes mHealth applications. Health-ITUEM concepts including information needs, flexibility/customizability, learnability, performance speed, and competency guided the categorization and analysis of the data. Health impact was an additional category that was included in the study. A total of 405 consumers' ratings collected from January 9, 2014 to February 17, 2014 were included in the study.

Results: Overall, the consumers' ratings of the leading diabetes mHealth applications for both usability and health impacts were positive. The performance speed of the mHealth application and the information needs of the consumers were the primary usability factors impacting the use of the diabetes mHealth applications. There was also evidence on the positive health impacts of such applications.

Conclusions: Consumers are more likely to use diabetes related mHealth applications that perform well and meet their information needs. Furthermore, there is preliminary evidence that diabetes mHealth applications can have positive impact on the health of patients.

Journal: Journal of Medical Imaging and Health Informatics

Year of Publication: 2015

Publication issue: 5(3)

Page numbers: 591-598

SHORTLINK: bit.ly/1PgYnFs

Title: Perception and attitude of physicians toward local generic medicines in Saudi Arabia: A questionnaire-based study

Author(s): Salhia, H. O., Ali, A., Rezk, N. L. & El Metwally, A.

Affiliation: School of Public Health, King Saud bin AbdulAziz University for Health Sciences, Riyadh, Saudi Arabia; Primary Healthcare Sector and Healthcare Affairs, Riyadh, Saudi Arabia; School of Applied Medical Sciences, Taibah University, Madina, Saudi Arabia; Andor Laboratories, Durham, USA.

Abstract:

Abstract Objectives: The current study aimed to explore the knowledge, perception, and attitude of physicians toward generic medicines in Saudi Arabia.

Background: The local market of generic medicine share in Saudi Arabia is low compared to global and regional statistics. The reason for this low market share and the role of physicians has not previously been investigated. The purpose of this study was to assess health practitioner level of perceived knowledge, opinions and attitudes about local generic medication, and identify factors that influence infrequency of generic prescriptions.

Methods: A random sample of 231 physicians was recruited from two hospitals in Riyadh (one government one private) and 178 (77%) responded. Information on the physicians' perceived knowledge, opinions and attitude toward local generic medication was extracted, analyzed and interpreted. Factors that influence infrequent prescription of local generic drugs were identified.

Results: Among the 178 participants in the physicians' survey, 76% and 47% reported that they are knowledgeable about the terms "generic" and "bioequivalence" respectively, while 44% reported that they are able to explain bioequivalence to their patients. Approximately 52% of physicians reported that local generics should be substituted for brands if suitable for the case, and 21.9% reported that they believe SFDA approved local generics are therapeutically equivalent to their brands. Clinical effectiveness was reported by 71.9% of physicians as the most influential factor effecting prescription of brand over local generic medication. The three independent significant predictors for infrequent prescription of local generics among physicians: Government sector employment (OR =3.74, [95%CI 1.50–9.43]), consultant level (OR= 3.94, [95%CI 1.50–10.31]) and low level of knowledge about local generics (OR =4.11, [95%CI 1.56–10.84]).

Conclusion: The low market share of local generics medicines attributed to low prescription rates is significantly more among senior-level physicians working in governmental hospitals. Low level of knowledge about generic drugs among physicians was the strongest predictive factor for low prescription. Future bigger studies are needed to confirm these results.

Journal: Saudi Pharmaceutical Journal

Year of Publication: 2015

Publication issue: 23(4)

Page numbers: 397-404

SHORTLINK: bit.ly/1XCZ1pr

Title: Systematic review of the epidemiology of attention deficit hyperactivity disorder in Arab countries

Author(s): Alhraiwil, N. J., Ali, A., Househ, M. S., Al-Shehri, A. M. & El-Metwally, A. A.

Affiliation: ¹⁻⁵ College of Public Health and Health Informatics, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; ⁵University of Aberdeen, Aberdeen, Scotland, UK.

Abstract:

OBJECTIVE: To assess the epidemiology of attention deficit hyperactivity disorder (ADHD) in Arab countries, and identify gaps for future research.

METHODS: We searched PubMed from July 1978 to July 2014 and reviewed local journals with cross-referencing. The keywords we used were ADHD, diagnosis, prevalence, incidence, factor, diagnosis, rate, risk, and each of the names of the 22 Arab countries (Jordan, Egypt, Lebanon, Saudi Arabia, and so on). Studies were eligible for inclusion if they investigated the epidemiology of ADHD in any Arab country, and were published in English. The search was conducted from 2nd to 5th August 2014 in King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

RESULTS: A total of 22 articles were included in the review. Twenty studies were cross-sectional and found the prevalence of ADHD ranged between 1.3-16%, prevalence of hyperactive type ADHD between 1.4-7.8%, and the prevalence of inattention type between 2.1-2.7%. Only 2 case-control studies investigated potential risk factors. Evidence extracted from these studies shows a significant association between ADHD and male gender, previous psychiatric illness in the family, vitamin D deficiency, poor school performance, sleep problems, and nocturnal enuresis.

CONCLUSION: The prevalence of ADHD in Arab countries is comparable to reports in North America, Africa, and other countries of the Middle East. Longitudinal studies are needed to investigate the prognosis and determinants of this condition in the Arab world.

Journal: Neurosciences

Year of Publication: 2015

Publication issue: 20(2)

Page numbers: 137-144

SHORTLINK: bit.ly/1tgoOXU

Title: Health beliefs related to diabetes mellitus prevention among adolescents in Saudi Arabia

Author(s): Al-Mutairi, R. L., Bawazir, A. A., Ahmed, A. E. & Jradi, H.

Affiliation: College of Public Health & Informatics, University of Hail, Hail, Saudi Arabia; Departments of Community & Environmental Health and Epidemiology & Biostatistics, College of Public Health & Health Informatics, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Objectives: The incidence of type 2 diabetes mellitus (T2DM) is growing rapidly in the Saudi population. The purpose of this study was to assess the constructs of the health belief model (HBM) as they relate to T2DM lifestyle and prevention behaviours among adolescents.

Methods: A cross-sectional study was conducted between May and October 2013 among 426 non-diabetic secondary school students from randomly selected schools in Riyadh, Saudi Arabia. An Arabic version of an adapted English language questionnaire was used to assess knowledge and attitudes related to the severity and prevention of T2DM. A preventative behaviour assessment was also conducted to assess physical activity and dietary habits.

Results: The majority of the students (63.4%) had at least one diabetic family member. Obesity was more frequent in males compared to females ($P = 0.013$). Awareness about the importance of maintaining a healthy body weight to prevent T2DM was lower in males than females ($P = 0.037$), although males engaged in routine exercise more often ($P = 0.001$). Males were less likely than females to recognise the risks for T2DM, including obesity ($P = 0.030$), heredity ($P = 0.013$) and high fat intake ($P = 0.001$).

Conclusion: An alarmingly high number of Saudi students were unaware of T2DM severity and associated risk factors. Female students were more aware of the benefits of T2DM preventative lifestyle behaviours than males, although males engaged in routine exercise more often. Raising adolescents' awareness about the primary prevention strategies for T2DM should be a public health priority in Saudi Arabia. The HBM could inform further research on diabetes prevention among Saudi adolescents.

Journal: Sultan Qaboos University Medical Journal

Year of Publication: 2015

Publication issue: 15(3)

Page numbers: e398-e404

SHORTLINK: bit.ly/1X9Nxc7

Title: Do routinely measured risk factors for obesity explain the sex gap in its prevalence?

Author(s): Garawi, F., Ploubidis, G. B., DeVries, K., Al-Hamdan & Uauy, R.

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Abstract:

Background

The prevalence of adult obesity is higher in women than men in most countries. However, the pathways that link female sex with excess obesity are still not fully understood. We examine whether socioeconomic and behavioural factors may mediate the association between sex and obesity in the Saudi Arabian setting where there is female excess in obesity.

Methods

We performed a mediation analysis using a cross-sectional, national household survey from Saudi Arabia with 4758 participants (51% female). A series of multivariable regression models were fitted to test if socioeconomic position, physical activity, sedentary behaviour, diet, and smoking mediate the association between sex and obesity (BMI ≥ 30). The findings were confirmed using causal mediation analysis.

Results

Women in this sample were roughly twice as likely as men to be obese (crude OR 1.9; 95% CI 1.6-2.3). The odds ratio remained significantly higher for women compared to men in models testing for mediation (OR range 1.95–2.06). Our data suggest that indicators of socio-economic position, physical activity, sedentary behaviour, diet, and smoking do not mediate the sex differences in obesity.

Conclusions

Our analysis shows that most commonly measured risk factors for obesity do not explain the sex differences in its prevalence in the Saudi context. Further research is needed to understand what might explain the female excess in obesity prevalence. We discuss how data related to the lived experience of Saudi men and women may tap into underlying mechanisms by which the sex difference in obesity prevalence is produced.

Journal: BMC Public Health

Year of Publication: 2015

Publication issue: 15(1)

Page numbers: -

SHORTLINK: bit.ly/1rcA7yg

Title: Global, regional, and national age-sex specific all-cause and cause-specific mortality for 240 causes of death, 1990-2013: A systematic analysis for the Global Burden of Disease Study 2013

Author(s): Naghavi, M., Wang, H., Lozano, R., Davis, A., Liang, X., et al.

Affiliation: Global Burden of Disease 2013 Mortality and Causes of Death Collaborators

Abstract:

Background: Up-to-date evidence on levels and trends for age-sex-specific all-cause and cause-specific mortality is essential for the formation of global, regional, and national health policies. In the Global Burden of Disease Study 2013 (GBD 2013) we estimated yearly deaths for 188 countries between 1990, and 2013. We used the results to assess whether there is epidemiological convergence across countries. **Methods:** We estimated age-sex-specific all-cause mortality using the GBD 2010 methods with some refinements to improve accuracy applied to an updated database of vital registration, survey, and census data. We generally estimated cause of death as in the GBD 2010. Key improvements included the addition of more recent vital registration data for 72 countries, an updated verbal autopsy literature review, two new and detailed data systems for China, and more detail for Mexico, UK, Turkey, and Russia. We improved statistical models for garbage code redistribution. We used six different modelling strategies across the 240 causes; cause of death ensemble modelling (CODEm) was the dominant strategy for causes with sufficient information. Trends for Alzheimer's disease and other dementias were informed by meta-regression of prevalence studies. For pathogen-specific causes of diarrhoea and lower respiratory infections we used a counterfactual approach. We computed two measures of convergence (inequality) across countries: the average relative difference across all pairs of countries (Gini coefficient) and the average absolute difference across countries. ...

Journal: Lancet

Year of Publication: 2015

Publication issue: 385(9963)

Page numbers: 117-171

SHORTLINK: bit.ly/1PGFPUF

Title: The Parents' Perception of Nursing Support in their Neonatal Intensive Care Unit (NICU) Experience

Author(s): Magliyah, A. F. & Razzak, M. I.

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Abstract:

NICU is an environment that has many challenges in information receiving and understanding. The infants that are cared for might have serious and complex medical problems. For Parents the NICU experience is filled with stress, fear, sadness, guilt and shock of having a sick baby in NICU. The aim of this research was to explore and describe parents' experience when their infant is admitted to the NICU. And assess their perception of nursing support of information provision and according to their emotional feelings. This study was undertaken at Neonatal Intensive Care Unit in King Abdulaziz Medical City (KAMC), Jeddah, Saudi Arabia which is part of National Guard Health Affairs (NGHA) organization in the kingdom. The study utilized a self-report questionnaire with likert scale measurement and telephone interview with closed questions. One hundred and four parents agree to be the part of study and provided their consent to include their children in the study. The majority of respondents were mothers (76%), the remaining (24%) from the total sample were Fathers. All their infants have been admitted to the NICU at 2014. Many parents did not able to receive enough information easily from the unit; most of them found the information by nurses was difficult to understand. The majority of parent's perceived high stress and anxiety level according to this information. Also, Most Parents was not agreed about the nurses' support towards their emotional feeling and care. Additional finding indicate that a decrease in support level being associated with an increase in stress and anxiety level. In order to provide a high level of support and decrease the level of stress, there is a need for developing support strategies. One strategy is through a technology to develop an automatic daily summary for parent.

Journal: International Journal of Advanced Computer Science and Applications

Year of publication: 2015

Volume: 6(2)

Page numbers: 153-158

SHORTLINK: bit.ly/1PGFAsN

Title: Prevalence of falls in an urban community-dwelling older population of Cape Town, South Africa

Author(s): Zimba Kalula, S., Ferreira, M., Swingler, M., Badri, M. & Sayer, A.

Affiliation: ¹⁻⁴ University of Cape Town, South Africa; ⁴King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Epidemiology Unit, University of Southampton, United Kingdom.

Abstract:

Objective: Falls are a major cause of disability and mortality in older adults. Studies on falls in this population have mainly been conducted in high income countries, and scant attention has been given to the problem in low and middle income countries, including South Africa. The aim of the study was to establish a rate for falls in older adults in South Africa.

Design: A cross-sectional survey with a 12-month follow-up.

Setting: Three purposively selected suburbs of Cape Town: Plumstead, Wynberg Central and Gugulethu
Participants: Eight hundred and thirty seven randomly sampled ambulant community-dwelling subjects aged 65 years grouped according to ethnicity in three sub-samples: black Africans, coloureds (people of mixed \leq ancestry) and whites.

Measurements: Data were collected on socio-demographic and health characteristics, and .history of falls using a structured questionnaire and a protocol for physical assessments and measurements

Results: Of the total baseline (n=837) and follow-up (n=632) survey participants, 76.5% and 77.2 %were females with a mean (S.D) age of 74 years (6.4) and 75 years (6.2), respectively. Rates of 26.4% and 21.9% for falls and of 11% and 6.3% for recurrent falls, respectively, were calculated at baseline and follow-up.

Fall rates (differed by ethnic sub-sample at baseline: whites 42 %, coloureds 34.4% and black Africans 6.4 % (p=0.0005) Rates of 236, 406 and 354 falls per 1000 person years were calculated for men, women and both genders respectively. Recurrent falls were more common in women than in men. **Conclusion:** Falls are a significant problem in older adults in South Africa. Effective management of falls and falls prevention strategies for older people in South Africa, need to be developed and implemented.

Journal: Journal of Nutrition, Health and Aging

Year of Publication: 2015

Publication issue: 19(10)

Page numbers: 1024-1031

SHORTLINK: bit.ly/1YdY7i1

Title: DREAM: Distributed RDF Engine with Adaptive Query Planner and Minimal Communication

Author(s): Hammoud, M., Rabbou, D. A., Nouri, R., Beheshti, S. & Sakr, S.

Affiliation: ¹⁻² Carnegie Mellon University in Qatar, Doha, Qatar; ³⁻⁴ University of New South Wales, Sydney, Australia; King Saud bin Abdulaziz University for Health Sciences, National Guard, Riyadh, Saudi Arabia

Abstract:

The Resource Description Framework (RDF) and SPARQL query language are gaining wide popularity and acceptance. In this paper, we present DREAM, a distributed and adaptive RDF system. As opposed to existing RDF systems, DREAM avoids partitioning RDF datasets and partitions only SPARQL queries. By not partitioning datasets, DREAM offers a general paradigm for different types of pattern matching queries, and entirely averts intermediate data shuffling (only auxiliary data are shuffled). Besides, by partitioning queries, DREAM presents an adaptive scheme, which automatically runs queries on various numbers of machines depending on their complexities. Hence, in essence DREAM combines the advantages of the state-of-the-art centralized and distributed RDF systems, whereby data communication is avoided and cluster resources are aggregated. Likewise, it precludes their disadvantages, wherein system resources are limited and communication overhead is typically hindering. DREAM achieves all its goals via employing a novel graph-based, rule-oriented query planner and a new cost model. We implemented DREAM and conducted comprehensive experiments on a private cluster and on the Amazon EC2 platform. Results show that DREAM can significantly outperform three related popular RDF systems.

Journal: Proceedings of the VLDB Endowment

Year of Publication: 2015

Publication issue: 8(6)

Page numbers: 654-665

SHORTLINK: bit.ly/1VLK6rg

Title: In vivo regeneration of renal vessels post whole decellularized kidneys transplantation

Author(s): Zhang, J., Wang, Z. et al. Lin, K., Yu, Y. ... Alkhwajji, A. et al.

Affiliation: Institute of Bioscaffold Transplantation and Immunology, Wenzhou Medical University, Wenzhou, China; Anatomy Department, Wenzhou Medical University, Wenzhou, China; Department of Anatomy, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Nearly 50 million patients in China live with end-stage renal disease (ESRD), and only about 4000 patients may receive kidney transplantation. The purpose of this study was to investigate regeneration of renal vessels post whole decellularized kidneys transplantation in vivo. We decellularized kidneys of donor rats by perfusing a detergent through the abdominal aorta, yielding feasible extracellular matrix, confirmed for acellularity before transplantation. Based on the concept of using the body as a bioreactor, we orthotopically transplanted the kidney and ureter scaffolds in recipient rats, and found the regeneration of vessels including artery and vein in the renal sinus following a spontaneous recanalization. Although the findings only represent an initial step toward the ultimate goal of the generation of fully functional kidneys in vivo, these findings suggest that the body itself, as the bioreactor, is a viable strategy for kidney regeneration.

Journal: Oncotarget

Year of Publication: 2015

Publication issue: 6(38)

Page numbers: 40433-40442

SHORTLINK: bit.ly/1ZwViaf

Title: CDPort: A Portability Framework for NoSQL Databases

Author(s): Alomari, E., Barnawi, A. & Sakr, S.

Affiliation: King Abdulaziz University, Jeddah, Saudi Arabia; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; University of New South Wales, Sydney, Australia

Abstract:

Cloud computing technology has been growing over the past few years. Currently, cloud providers provide their consumers with several cloud services. However, developers face many difficulties when they have to move their data or software from one cloud platform to another due to the lack of standards. This challenge is considered as one of the key obstacles that prevent many applications from moving to the cloud environment. In this paper, we focus on the challenge of data portability. We propose a common data model and a standardized API for SQL and NoSQL cloud databases. In particular, our approach hides the possible variations of the backend data storage models from the application layer. In addition, our framework is equipped with tools that support the conversion, transformation and data exchange between the different data storage models. The current implementation of our framework supports four different data storage systems: Amazon RDS, Google Datastore, Amazon SimpleDB and MongoDB. However, our framework is designed in a flexible way such that it can be easily extended to support other data storage systems. Moreover, we offer a standard query abstraction to enable automatic translation between NoSQL query patterns and their associated SQL queries (in both directions). The experimental evaluation of our framework shows that using our framework eliminates or minimizes the effort of rewriting the application code when the backend data storage system is changed. Further, the proposed transformation tool reduces the effort of maintaining data portability between the different data models that we have considered.

Journal: Arabian Journal for Science and Engineering

Year of Publication: 2015

Publication issue: 40(9)

Page numbers: 2531-2553

SHORTLINK: bit.ly/1VLLcDg

Title: Segmentation techniques for recognition of Arabic-like scripts: A comprehensive survey

Author(s): Naz, S., Umar, A. I., Shirazi, S. H., Ahmed, S. A., Razzak, M. I. et al.

Affiliation: ¹⁻³ Department of Information Technology, Hazara University, Mansehra, Pakistan; ⁴⁻⁵ King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Arabic script based text recognition system has been a popular field of research for many years that can be used in the learning and teaching process to the students and educators how to read and understand educational contents of Arabic script. The challenging nature of Arabic script recognition has attracted the attention of researchers from both industry and academic circles but these efforts have not achieved good results until now. Segmentation of Urdu script when written in Nasta'liq writing style is very difficult task due to the complexity of writing style as compare to Naskh writing style. Good segmentation is one of the reasons for high accuracy. Character segmentation has been a critical phase of the OCR process. The higher recognition rates for isolated characters as compare to results of words or connected character well illustrate the importance of segmentation. Current study investigates the recent work for character segmentation and challenges for segmentation for Arabic script based languages.

Journal: Education and Information Technologies

Year of Publication: 2015

Publication issue: -

Page numbers: -

SHORTLINK: bit.ly/1RWRitC

Title: Large scale graph processing systems: survey and an experimental evaluation

Author(s): Batarfi, O., El Shawi, R., Faoumi, A. G., Nouri, R., Beheshti, S. & Sakr, S.

Affiliation: King Abdulaziz University, Jeddah, Saudi Arabia; Princess Nourah Bint Abdulrahman University, Riyadh, Saudi Arabia; University of New South Wales, Australia; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Graph is a fundamental data structure that captures relationships between different data entities. In practice, graphs are widely used for modeling complicated data in different application domains such as social networks, protein networks, transportation networks, bibliographical networks, knowledge bases and many more. Currently, graphs with millions and billions of nodes and edges have become very common. In principle, graph analytics is an important big data discovery technique. Therefore, with the increasing abundance of large graphs, designing scalable systems for processing and analyzing large scale graphs has become one of the most timely problems facing the big data research community. In general, scalable processing of big graphs is a challenging task due to their size and the inherent irregular structure of graph computations. Thus, in recent years, we have witnessed an unprecedented interest in building big graph processing systems that attempted to tackle these challenges. In this article, we provide a comprehensive survey over the state-of-the-art of large scale graph processing platforms. In addition, we present an extensive experimental study of five popular systems in this domain, namely, GraphChi, Apache Giraph, GPS, GraphLab and GraphX. In particular, we report and analyze the performance characteristics of these systems using five common graph processing algorithms and seven large graph datasets. Finally, we identify a set of the current open research challenges and discuss some promising directions for future research in the domain of large scale graph processing.

Journal: Cluster Computing-the Journal of Networks Software Tools and Applications

Year of Publication: 2015

Publication issue: 18(3)

Page numbers: 1189-1213

SHORTLINK: bit.ly/1XD2Db9

Title: Evaluation of cursive and non-cursive scripts using recurrent neural networks

Author(s): Ahmed, S. B., Naz, S., Razzak, M. I., Rashid, S. F., Afzal, M. Z., et al.

Affiliation: King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Department of Information Technology, Hazara University, Mansehra, Pakistan; Higher Education Department, Abbottabad, Pakistan; University of Technology, Kaiserslautern, Germany; et al.

Abstract:

Character recognition has been widely used since its inception in applications involved processing of scanned or camera-captured documents. There exist multiple scripts in which the languages are written. The scripts could broadly be divided into cursive and non-cursive scripts. The recurrent neural networks have been proved to obtain state-of-the-art results for optical character recognition. We present a thorough investigation of the performance of recurrent neural network (RNN) for cursive and non-cursive scripts. We employ bidirectional long shortterm memory (BLSTM) networks, which is a variant of the standard RNN. The output layer of the architecture used to carry out our investigation is a special layer called connectionist temporal classification (CTC) which does the sequence alignment. The CTC layer takes as an input the activations of LSTM and aligns the target labels with the inputs. The results were obtained at the character level for both cursive Urdu and non-cursive English scripts are significant and suggest that the BLSTM technique is potentially more useful than the existing OCR algorithms.

Journal: Neural Computing and Applications.

Year of Publication: 2015

Publication issue: Epub 2015

Page numbers: -

SHORTLINK: [bit.ly /25LBJ1A](http://bit.ly/25LBJ1A)

Title: Urdu Nasta'liq text recognition system based on multi-dimensional recurrent neural network and statistical features

Author(s): Naz, S., Umar, A. I., Ahmed, R., Ahmed, S. B. Shirazi, S. H., et al.

Affiliation: ^{1-2,4} Department of Information Technology, Hazara University, Mansehra, Pakistan; University of Technology, Kaiserslautern, Germany; King Saud Bin Abdul Aziz University for Health Sciences, Riyadh, Saudi Arabia; et al.

Abstract:

Character recognition for cursive script like Arabic, handwritten English and French is a challenging task which becomes more complicated for Urdu Nasta'liq text due to complexity of this script over Arabic. Recurrent neural network (RNN) has proved excellent performance for English, French as well as cursive Arabic script due to sequence learning property. Most of the recent approaches perform segmentation-based character recognition, whereas, due to the complexity of the Nasta'liq script, segmentation error is quite high as compared to Arabic Naskh script. RNN has provided promising results in such scenarios. In this paper, we achieved high accuracy for Urdu Nasta'liq using statistical features and multi-dimensional long short-term memory. We present a robust feature extraction approach that extracts feature based on right-to-left sliding window. Results showed that selected features significantly reduce the label error. For evaluation purposes, we have used Urdu printed text images dataset and compared the proposed approach with the recent work. The system provided 94.97% recognition accuracy for unconstrained printed Nasta'liq text lines and outperforms the state-of-the-art results.

Journal: Neural Computing and Applications.

Year of Publication: 2015

Publication issue: -

Page numbers: -

SHORTLINK: bit.ly/1UEdPQj

Title: Runtime self-monitoring approach of business process compliance in cloud environments

Author(s): Barnawi, A., Awad, A., Elgammal, A., El Shawi, R., Almalaise, A. & Sakr, S.

Affiliation: ^{1,4} King Abdulaziz University, Jeddah, Saudi Arabia; ²⁻³ Cairo University, Giza, Egypt; Princess Nourah Bint Abdulrahman University, Riyadh, Saudi Arabia; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Recently, several industrial studies have concluded that compliance management is one of the major challenges companies face nowadays. In practice, runtime compliance monitoring is of utmost importance for compliance assurance as during the design-time compliance checking phase, only a subset of the imposed compliance requirements can be statically checked due to the absence of required variable instantiation and contextual information. Furthermore, the fact that a business process model has been statically checked for compliance during design-time does not guarantee that the corresponding running business process instances are usually compliant due to human and machine errors. The problem of runtime monitoring of business process compliance becomes more challenging when business processes are executed in cloud computing environments. In this context, the compliance process can not rely on external components as the whole execution environment is mainly controlled by the cloud providers. In this article, we propose a novel approach to tackle this problem by adopting and configuring the business process models into a form that augment the associated compliance rules so that they can be monitored without the need to rely on external monitoring components. Compared to approaches that depend on an external monitoring component, our approach requires less sophisticated infrastructure when hosted on the cloud as well as less traffic footprint as communication with an external component for monitoring is no longer needed.

Journal: Cluster Computing-the Journal of Networks Software Tools and Applications

Year of Publication: 2015

Publication issue: 18(4)

Page numbers: 1503-1526

SHORTLINK: bit.ly/1TYmO10

Title: Adaptive filtering algorithms for channel equalization in wireless communication

Author(s): Razzak, I.

Affiliation: King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

The major problem in today' wireless communications is time dispersion and inter symbol interference. To combat these issues various adaptive equalization techniques are used. In literature state of art algorithms of adaptive equalization will be studied in detail, however the utmost goal of these algorithms is to attain high convergence rate, less complexity and least error. In this paper a comparison between least mean square algorithm and fractional least mean square algorithm is presented and experimentally proved that the rate of convergence is high in case of fractional least mean square algorithm. Also it is observed that LMS algorithm has better performance for random signals and fractional LMS has proved very efficiently in case of deterministic signals. These both algorithms are implemented in MATLAB and eight channels with different tap weights are used but in this paper only selected are presented.

Journal: Indian Journal of Science and Technology

Year of Publication: 2015

Publication issue: 8(17)

Page numbers: -

SHORTLINK: bit.ly/1WEnVUY

Title: The Empirical Distribution of the Singular Values of a Random Hankel Matrix

Author(s): Ghodsi, M., Alharbi, N. & Hassani, H.

Affiliation: Statistical Research Centre, Business School, Bournemouth University, UK; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia; Institute for International Energy Studies, Tehran, Iran.

Abstract:

The empirical distribution of the eigenvalues of the matrix $\mathbf{H}\mathbf{H}^T$ divided by its trace is considered, where \mathbf{H} is a Hankel random matrix. The normal distribution with different parameters is considered and the effect of scale and shape parameters is evaluated. The correlation among eigenvalues is assessed using parametric and non-parametric association criteria.

Journal: Fluctuation and Noise Letters

Year of Publication: 2015

Publication issue: 14(3)

Page numbers: -

SHORTLINK: bit.ly/1YcEbMn

Title: A Framework for Consumer-Centric SLA Management of Cloud-Hosted Databases

Author(s): Zhao, L., Sakr, S. & Liu, A.

Affiliation: ^{1,3} National ICT Australia; School of Computer Science and Engineering University of New South Wales, Australia; King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Abstract:

Service Level Agreements (SLA) represent the contract which captures the agreed upon guarantees between a service provider and its customers. The specifications of existing service level agreements (SLA) for cloud services are not designed to flexibly handle even relatively straightforward performance and technical requirements of consumer applications. In this article, we present a novel approach for SLA-based management of cloud-hosted databases from the consumer perspective. We present an end-to-end framework for consumer-centric SLA management of cloud-hosted databases. The framework facilitates adaptive and dynamic provisioning of the database tier of the software applications based on application-defined policies for satisfying their own SLA performance requirements, avoiding the cost of any SLA violation and controlling the monetary cost of the allocated computing resources. In this framework, the SLA of the consumer applications are declaratively defined in terms of goals which are subjected to a number of constraints that are specific to the application requirements. The framework continuously monitors the application-defined SLA and automatically triggers the execution of necessary corrective actions (scaling out/in the database tier) when required. The framework is database platform-agnostic, uses virtualization-based database replication mechanisms, and requires zero source code changes of the cloud-hosted software applications. The experimental results demonstrate the effectiveness of our SLA-based framework in providing the consumer applications with the required flexibility for achieving their SLA requirements.

Journal: IEEE Transactions on Services Computing

Year of publication: 2015

Volume: 8(4)

Page numbers: 534-549

SHORTLINK: bit.ly/25LC1FB

A		Alalwan, I.	262, 291
Abahoussin, O. K.	145	Alam, J. M.	114
Abaneh, A. M.	302	Alama, M. N.	246
Abaneh, F.	186	Alamoudi, A. S.	258
Abdalla, K.	169, 172	Alamoudi, N. M.	185
AbdAziz, N.	63	Alamry, A. A.	89
Abdehadi, H. A.	114	Alanazi, A.	193, 224, 227, 250, 348
Abdelaal, M.	174	Alanazi, M. Q.	40, 47
Abdullah, S.	69	AlAnazi, S. A.	154
Aboalela, N.	350	Alanazy S.	203
Abolfotouh, M. A.	19, 48	AlAqeel, S. M.	50
Abomaray, F. M.	18	Alaskar, A. S.	18, 31, 78, 80, 90
Abraldes, J. G.	84	Alasmari, A. M.	139
Abrar, M. B.	174	Alassaf, A.	210
Absi, A.	174, 289	Alassiri, M. H.	48
Abuarab, N.	272	Alateeq, M.	260
Abulaban, A. A.	110	Alateeq, M. A.	259
Abulkhair, O. M.	157	Alazzam, S. S.	143
Abumaree, M. H.	22, 23	Albabtain, I.	70
Abuodeh, R.	241	Albader, B.	322
Abuodeh, R. O.	289	Albalwi, M. A.	178
AbuSalah, K. M.	54	Albanyan, A. A.	257
Abu-Salem, K. M.	39	Albanyan, H. A.	311
Abushouk A.	232	Albaqami, N. M.	263
AbuTabar, N.	251, 252	Albawab, A.	50, 68
Agha, S.	334	Albayyari, M.	299
Ahmad, A.	322	Albekairy, A.	365
Ahmad, I.	117	Albshabshe, A. O.	332
Ahmed, A. A.	238, 317, 325	Albuhairan, F.	79
Ahmed, A. E.	5, 31, 369, 379	Albuhairan, F. S.	44, 46
Ahmed, A. M.	316, 346	Alburuz, S.	365
Ahmed, G. Y.	221	Aldajani, N.	184
Ahmed, M.	175, 180, 271	Aldandan, S.	191
Ahmed, M. E.	5, 216	Aldawood, A. S.	35
Ahmed, M. U.	180	Aldegaitheer, N.	143, 351
Ahmed, R.	390	Aldelemy, M. L.	67
Ahmed, S.	366	Aldera, H.	72, 232, 234
Ahmed, S. A.	387	Aldera, H. S.	72, 68
Ahmed, S. B.	389, 390	Aldorazi, S. A.	10
Akangari, A. A.	183	Aldori, H. M.	145
Akdukair, S.	44	Aldossari, B.	375
Akl, E. A.	280	Aldraiweh, A.	184
Akzamel, H. A.	211	Aldrees, A. M.	309, 310
Alabbasi, S.	145	Aldrees, T.	122, 297
Alabdulsalaam, A.	115	Aldrees, T. M.	256
Alabdulsalaam, O.	115	Aldubayee, M. S.	188
Alabdulsalam, O.	155, 176, 202, 220	Aldughaitheer, A.	260
Alabuyee, M. A.	44	Alduhaiby, E.	167
Alajlan, A.	166	Alduqashim, S.	242
Alalawyat	187	Alehniidi, F. H.	63
Alalem, H. A.	188		

Aleidan, F. A. S.	266, 267	Alharbi, M.	105
Aleidi, H.	53	Alharbi, M. K.	146
Aleissa, M.	79	Alharbi, N.	278, 293
Aleissa, M. A.	46	Alharbi, N. K.	59, 87
Aleissa, S.	122	Alharbi, N. O.	67
Alenezi, F.	227, 360	Alharbi, N. S.	277
Alfadda, S. A.	311	Alharbi, T.	191
Alfadhel, M.	199, 354	Alhariri, M.	60
Alfallaj, H. A.	311	Alharthy, N.	128
Alfaraj, S. S.	345	Alharthy, S.	18
Alfaresi, M.	255	Alhatlani, M. M.	36
Alfarhan, A. I.	256	Alhawashim, N.	180
Alfayea, T. M.	163	Alhazmy, A.	17
Alfelali, M.	142	Alhejaily, A.	229
Alferyan, A.	216	Alhgamdi, M. H.,	247
Alfoheidi, M. E.	164	Al-Hidar, M.	86
Alfozan, H.	344	Alhoudi, W.	134
Algabbani, S.	82	Alhraiwil, N. J.	378
Algahtani, F. H.	331	Alhujaily, E.M.	52
Algahtani, H. A.	110, 240, 285	Alhujayri, A. K.	213
Algahtani, M. A.	309	Alhumaid, W.	83
Algatani, K.	297	Alhusainan, H.	210
Algathani, M.	213	Alhussaini, A.	121
Alghamdi, A. A.	98	Ali, A.	85, 377, 378
Alghamdi, M. H.	214	Ali, A. H.	28
Alghamdi, S.	193	Ali, M.	357
Alghannam, R.	275	Ali, N. H.	289
Alghnam, S.	20, 45	Ali, S.	336
Alghobain, M.	268	Aljabbary, A.	83
Alghoribi, M. F.	76	Aljada, A.	21, 50, 55, 68, 82
Algirim, H.	195	Al-Jadaan, S.	182
Alhabib, K. F.	126	Aljamaan, K.	160, 358
Alhabib, S.	141	Aljani, A. S.	309
Alhabshan, F.	214	Aljasser, M. I.	282
Alhabshan, F. M.	247	Aljasser, S.	351
Alhalabi, J. O.	123	Aljehani, Y. A.	225
Alhamad, A.	109	Aljeraisy, M. I.	40, 47
Alhamdan, H.	16	Aljiffri, A.	57
Alhamdan, N. A.	137, 320	Aljizani, W. A.	163
Alhamdan, N. A.	380	Aljizeeri, A.	71, 104, 152
Alhameed, F.	173	Aljohani, K.	130
Alhameed, F. M	165, 274, 331	Aljohani, N.	105, 127, 261, 316
Alhamlan, N. H.	310	Aljohani, N. J.	120, 324
Alhammad, R. I. S.	250	Aljohani, S.	270
Alhamrani, A. Y.	334	Aljohani, S. M.	144
Alhaqbani, B.	374, 376	Aljouie, A.	34
Alhaqwi, A.	256	Aljuhani, A. F.	48
Alhaqwi, A. I.	319, 335, 341	Aljumah, A. A.	136
Alharbi, A.	322	Aljumah, M.	65, 80
Alharbi, K. K.	352	Aljumah, M.	30
Alharbi, M.	191	Aljumah, M.	286

Aljumah, M. A.	18	Alniwaider, R. A. R.	248
Aljumah, M. A.	89	Alokaili, R. N.	216
Aljumah, T. K.	160, 358	Aloraibi, S.	160, 358
Aljuraibah, F. N.	188	Al-Oraibi, S.	227
Alkadi, L. T.	308	Aloraidi, A.	216
Alkadri, H.	344	Al-Otaibi, A.	182
Alkadri, H. M.	154, 156	Aloudah, N.	16
Alkatheri, A.	365	Alqahtani, F.	173, 189
Alkathiri, M.	68	Alqahtani, M.	227
Alkaysi, R. O.	27, 86	Alqahtani, S.	360
Alkenaizan, S.	189	Alqanatish, J. T.	189
Alkhadi, R. M.	311	Alqueflie, S.	128
Alkhairy, A.	43	Alraddadi, A. A.	124
Alkhairy, O. K.	177	Alrakban, A. M.	124
Al-Khaldi, A.	212	Al-Rasheed, R. S.	131
Alkhateeb, J. M.	168	Al-Rasheedy, I. M.	165
Alkhateeb, M.	229	Alrashidi, E. A.	168
Alkhateeb, S. S.	263	Alreemawi, R.	323
Alkhateeb, S. S.	168	Alrifai, M. T.	77
Alkhathaami, A. M.	89	Alrokayan, S. A.	54
Alkhawaji, A.	385	Al-Romaeh, A. I.	27
Alkohlani, H.	208	Al-Roomy, M.	300
Alkurdi, A.	184	Alrumayyan, A.	256
Almaghrabi, M. M.	258	Al-Rusaieess, A. A.	259
	71, 95, 97, 99, 100,	Alsaad, K.	16
Al-Mallah, M. H.	101, 104, 151, 152,	Alsaad, K. O.	182
	153	Alsaawi, A.	132
Al-Mansour, M. M.	163, 164	Alsaeed, A.	174
Al-Masri, M.	125	Alsahafi, A.	361
Al-Matar, S. H.	82	Alsaif, A. A.	146
Al-Mawlawi, N.	241, 289	Alsaif, M. A.	9, 205
Almazrou, K. A.	184	Alsaileek, A.	71
Al-Medhar, A.	69	Al-Saleh, S.	197
Almehmadi, F.	245	Alsaleh, S. S.	206
Al-Meshal, O.	210	Al-Saleh, W. M.	343
Al-Moamary, M. S.	277	Al-Saleh, Y.	105, 120, 200, 265
Almodayfer, O.	198	Al-Saqqabi, A. H.	362
Almodhen, F.	359	Alsawid, B.	29
Al-Mohrej, O. A.	287	Alsayegh, K. N.,	8
Almomen, A. K.	305	Alsayid, B.	17
Al-Momen, A. M.	331	Alseady, A.	116
Almous'ad, F.	96	Alsewari, W. M.	189
Al-Mously, N.	318	Al-Shaalan, M.	182
Al-Mugti, H.	139	Alshaikh, A.	112
Al-Muhanna, M. K.	27	Alshammari, A.	359
Almuneef, M.	79	Alshammari, J.	203
Almuqbil, M.	353, 356	Alshammari, R.	371, 372
AlMutair, A.	184	AlShardan, M. M.	209
Almutairi, A. F.	33, 73, 93	Alsharif, M.	17
Almutairi, F.	288	Alshaya, W.	219
AlMutairy, H.	260	Al-Shehri, A. M.	378
Almutari, F.	204		

Alshehri, A.M.	329	B	
Alshehri, S.	44	Babaeer, A.	111
Alshehri, T. O.	145	Babiker, O.	195
AlShehry, M. A.	225	Badawoodm, L.M.	253
Alsherbeni, S.	171	Badri, M.	122, 262, 297, 305, 283
Alshirian, S.	72	Badri, M. A.	291
AlShomer, F.	213	Badwelan, M.	312
Alsolamy, S.	360	Baharoon, S.	116, 270, 317
Alsolamy, S.	129	Bahhari, H. M.	27
Alsowayan, O.	359	Baig, M.	262
Alswaid, A.	192	Bakhaidar, M.	29
Alswat, K. A.	138	Balkhy, H.H.	279
Altalalwah, W.	10, 13, 37, 38	Balky, H.	15
Altalalwah, W. B.	12	Balky, H. H.	7, 76
Altamimi, W.	248	Bamefleh, H. S.	156
Altawil, K. L.	77	Bamuhair, S. S.	150
Althubaiti, A.	276	Banimustafa, A. A	48
Althubaiti, A. M.	276	Banjar, A. A.	139
Al-Thunyan, A.	210	Barnawi, A.	386, 391
Altraif, I.	140	Basakran, N. S.	162
AlTurki, S.	181	Batwa, F.	258, 347
Alwasiah, R.O.	276	Bawazeer, M. S.	187
Aly, M.	15, 43	Bayyoumi, Y.	191
AlYamany, M.	209	Bdeir, B.	102
Alyousef, K.	128	Bhat, P. G.	293
Alyousef, S.	119	Bin Saleh, G.	85
Alyousif, S.	262	Bin-Abbas, I. A.	291
Alzahrani, A. R.	145, 190	Binkley, P. F.	327
Al-Zahrani, D.	183, 355	Borai, A.	32
Al-Zahrani, J. M.	322	Bouchama, A.	14, 24, 75
Alzahrani, N.	218	Bugis, A. A.	363
Al-Zahrani, R.	369	Buhary, B. A. M.	171, 316
Alzahrani, S.	171, 316	C	
Alzahrani, T. A.	146	Conboy, T.	102
AlZamel, H. A.	143	Cook, D. J.	61, 88, 330
Alzarouni, A.	255	Cook, N. B.	314
Ansari, M. A.	227	Crankson, S.	208
Anwar, A.	58	D	
Anwar, A. E.	325, 326	Da'ar, O. B.	337
Arab, A. F.	5	Da'as, T.	107
Arabi, Y.	14, 147, 330	Daghistani, T.	373
Arabi, Y. M.	35, 61, 62, 75, 88, 333	Darwish, A.	170, 175
Asiri, A. M.	114	Dawood, E.	253
Attar, A.	29	Desin, T. S.	292, 294
Awad, A.	391	Doria, J.	82
Awad, E.	133	Duke, C.	196
Awadh, V.	312	E	
Aziz, M.	233	Eid, A. F.	149
Aziz, M. A.	81, 91	El-Abadelah M. M.	55, 81, 91
Azzumeea, F.	211	El-Bakri, N. K.	346

Elbanna, K. Y.	211	Hassan, I.	221
Elbarbary, M.,	342	Hassan, S.	334
El-Boubbou, K.	27, 86	Hassani, H.	278, 393
Elfaki, E. M.	223	Hattingh, S.	254
Elfaki, W.	214	Hijazi, R.	133
Elhemaidi, I.	158	Hmoud, M.	69
Elimam, N.	169, 172	Househ, M.	370
Elmetwally, A.	85	Househ, M. S.	375, 378
Elmetwally, A. A.	378	Howlader, M.	117
Elsaed, A.	135	Hussein, J.	75
Elsayed, A.	26	Hussein, M. A.	5
Elsherif, Z.	103	I	
Eltigani, A.	175	Ibrahim, A. A.	291
Enoka, R. M.	231	Ibrahim, E. M.	164
Esfandiari, M.	34	Imad, H.	269
Essa, M.	357	Iqbal, B. A. C.	172
F		Iqbal, Z.	51, 160, 226, 298, 348, 358
Fakhoury, H. A.	78, 80	Islam, T.	297
Fallatah, F.	159	Ismail, Z.	54
Farahat, F.	29, 57	J	
Farahat, Y.	255	Jabir, N. R.	246
Faraj, K.	26	Jafar, S.	221
Fararjeh, M.	106	Jameel, A.	221
Farooq, R.	180	Jamil, S.	103
Farooq, S.	226	Jamjoom, A. B.	217
Farooqui, M.	16	Jamleh, A.	307, 313
Fattah, M. A.	248, 250	Jan, S.	29
Ferox, Z.	271	Jastaniah, W.	169, 172
Fertketich, A. K.	327	Jawdat, D.	80
Ferwana, M.	249	Jazieh, A.	31
Fouzan, K. A.	312	Jfri, A.	284
G		Jodeh, S.	296
Gamal, B.	312	Johani, S.	43, 75
Geevarghese, A.	225, 312, 315	Johani, S. M.	76
Gieballa, M.	208	Joosub, I.	6
Gonzales, C. B.	70	Jradi, H.	327, 349, 379
Goodrich, J. T.	216	K	
H		Kabbani, M. S.	215
Hadad, S.	83	Kaddumi, E. G.	235
Haddad, S.	147, 148	Kalionis, B.	18
Haddad, S. H.	35, 70, 143	Kamal, M.	156
Hajeer, A. H.	14, 78	Kamal, M. A.	246
Halwani, M.	60	Kamalis, M.	18
Hamam, A. F.	130	Kanan, R.	351
Hamdan, A. J.	58	Karar, T.	223, 248, 250
Hamdan, M. A.	185	Karvellas, C. J.	84
Hamed, E. M.	296	Kashour, T. S.	252
Hamed, O. A.	296	Khalidi, N.	365
Haoudi, A.	25, 49	Khan N.	200, 348
Harthi, A.	75	Khan S. A.	370
Hasosah, M.	361		

Khan, A. M.	322	Preiser, J. C.	62
Khan, I. A.	352	Q	
Khan, R. A.	243, 271, 366	Qandil, A.	364, 365
Khan, W.	230, 288, 290, 295,	Qayad, M.	46
	301	Qureshi, S.	223, 248, 250
Khankan, A.	150	Qureshi, W. T.	95, 97, 99, 153
Khankan, A. A.	5	R	
Khatiri, I. A.	113	Rabhan, Z.	53
Khattab, T. M.	169, 172	Radi, S. A.	258
Kojan, S. M.	89, 110	Ranjit, L.	108
Krayem, A.	118	Razzak, I.	392
L		Razzak, M. I.	373, 374, 376, 382, 387, 389
Laika, L.	85	Refaat, A.	236, 237
Lappas, M.	74	Rezk, N. L.	85, 377
Loharia, J. J.	114	Riaz, A.	243
M		Robertson, D.	264
Magliyah, A. F.	382	Rodney, P.	93
Mahfouz, A. A.	48	S	
Mahmood, N.	103	Sabbach, A. J.	339
Mahmoud, A. M.	228	Sakr, S.	384, 386, 388, 391, 394
Mahmoud, K.	26	Salam, A.	6
Makhdoum, A. M.	258	Salam, M.	40, 47
Marei, T. F.	114	Saleh, A. M.	50, 55, 56, 66, 68, 81, 82, 91
Matou-Nasri, S.	53	Saleheen, H.	46
Merdad, A. A.	258	Salhia, H. O.	377
Moammer, G.	26	Salim, B.	58
Mohamed, T. A.	335	Samkari, A.	69, 166
Mohammad, S.	64	Satti, M.	361
Mohammedkhalil, A.	17	Shafi, R. U.	163
Mosli, H. H.	276	Shaharyar, S.	237
Muchtar, A.	102	Shammari, R. A.	373
Mulders, W. H.	264	Shamsa, H. B.	50
Mundi, M.	28	Shamsa, H. S.	68
Munsey, T. S.	272	Shattat, G.	303, 304
Munshi, F.	119	Shattat, G. F.	306
N		Shehzard, A.	361
Naeem, M.	79	Shen, Y.	308
Naeem, M. A.	188	Shimemri, A. S.	144
Najm, H.	106	Shirazi, B.	340
Nasr, A.	81, 91, 239	Shirazi, S. H.	387, 390
O		Soames, R.	10, 13, 273
Obeid, T. H.	110	Souers, R.	179
Obeidat, A. S.	341	Srouf, M.	353
Odeh, R.	102	Subahi, A.	244
Omair, A.	188, 336, 340	Sukkar, G.	361
Omair, A. A.	156	T	
Omer, H.	102	Taha, M. O.	55, 81, 91, 364
Omer, N.	238	Taha, S. W.	319
Oraby, T.	321		
P			
Pirie, P. P.	327		

Taha, W. S.	338
Tamim, H.	44, 270
Tamim, H. M.	70, 83
Tamimi, O.	106, 212
Tamimi, W.	248, 351
Tamin, H. M.	35, 144, 154
Tanqiisuran, B.	63
Taylor, L.	161
Telmesani, A.	270
Thallaj, A. K.	146
U	
Uauy, R.	380
V	
Verma, J.	92
Verma, S.	92
W	
Wagas, H.	103
Wali, S. O.	117, 118
Walters, T.	42
Wewers, M. E.	327
Y	
Yassin, A. E. B.	41
Yassin, B.	368
Yiannakou, N.	180
Yong, H. E. J.	74
Yosra, A.	58
Yousef, Y. A.	275
Yousef, Z. M.	143
Yunus F.	128, 345, 375
Z	
Zaidi, S. F.	233, 236, 237, 281, 367
Zowawi, H. M.	7, 255, 283, 328



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