Arabian Gulf University (AGU)  
College of Medicine & Medical Sciences (CMMS)  

Bibliography, Abstracts, Citations of Articles Published in Peer Reviewed Journals by CMMS Fulltime Faculty Members (2007-2011)  

Volume (II)  

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Preface

Since the establishment of the College of Medicine and Medical Sciences (CMMS) at the Arabian Gulf University (AGU) in 1982, fostering basic and applied research that responds to priority health needs in the Gulf Corporation Council (GCC) region has been at the core of its mission and goals. In this context, and as part of CMMS promotion and advancement of health research in the region, the College has, since 2002, embarked on compiling the publications of full-time faculty. This document is the second publication in this series covering the period from 2007 to 2011. Published papers have covered a wide range of topics from basic sciences, clinical medicine and medical education, and are in line with the research needs of the region. The papers were published in local, regional and international journals. Further, it is gratifying that many of the publications are in renowned journals with wide readership and high impact factors.

Grateful acknowledgement is due to Professor Randah Hamadeh, Vice Dean, Graduate Studies and Research for her meticulous leadership of the efforts to compile this volume. I also extend my thanks and congratulations to all my colleagues in CMMS, without whose research efforts, this work would have never been possible.

Dr. Khaldoon Al-Roomi
Dean, College of Medicine & Medical Sciences

November 6, 2013
Introduction

The Arabian Gulf University (AGU) leadership and faculty members have always aspired to excellence in education and research. In 2007, the first publication of the bibliography and abstracts by AGU faculty members in hard-copy format was compiled by the AGU Unit of Documentation. It covered the years 2000 to 2007 and was comprised of two volumes; one for the publications of the College of Medicine and Medical Sciences (CMMS) and the other one for the publications of the College of Graduate Studies.

It is my pleasure to introduce the second volume of the CMMS publication series entitled “Bibliography, Abstracts, Citation Links of Articles Published in Peer Reviewed Journals and Books by CMMS Fulltime Faculty Members” Volume II, for the period from 1st January 2007 to 31st December 2011. It will be available in hard copy and online at the AGU website with links to citation sources. Further, the included bibliography excludes publications of CMMS fulltime faculty members who had their papers accepted while they were at the College but left prior to its publication. Thus, the over 400 cited peer reviewed articles are an underestimate. The scientific research accomplishments of the College should be perceived in the context of the relatively small number of faculty members, whose number ranges in the 40’s, yet have managed to publish papers and books locally, regionally and internationally with several publications in journals with high impact factors. The five-year publications are cited according to the Vancouver Style. They are alphabetically arranged by first authors’ names with CMMS authors shown in bold. The citation is followed by a website link and an abstract. The publication also includes an alphabetical index with CMMS authors and the corresponding page numbers of their publications as well as an index of their affiliated departments.

It is hoped that researchers in the region and globally will benefit from this publication in their future research and that further collaborations emerge with CMMS researchers in topics of mutual interest.

Prof. Randah R. Hamadeh
Vice Dean for Graduate Studies and Research
College of Medicine and Medical Sciences
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30th October 2013
Acknowledgements

I would like to express my sincere gratitude to all the current and former CMMS fulltime faculty members who contributed to this scientific publication. The help provided by Mr Mahjoub Baba is appreciated. Special thanks go to Mrs. Ina D’Souza and Mrs. Amina Hussain Basheer for their secretarial assistance.

Abstract: Rhinoscleroma is a chronic progressive inflammatory disease of the upper respiratory tract. We report a clinicopathological series from the Gulf region. The clinical and pathological features of patients diagnosed with rhinoscleroma at three main hospitals in Saudi Arabia and Bahrain over a 20-year period are presented. Archived glass slides and paraffin blocks from these patients were retrieved from the pathology files for review. Special stains were performed whenever indicated. Biopsy material and clinical data from 25 patients formed the basis of this study. Results: most of the patients were young females with a median age of 24 years. The nose was involved in all cases with frequent extension to other parts of the upper respiratory tract. The provisional clinical diagnoses included syphilis, midline granuloma and malignancy. The histological differential diagnoses included leprosy, malakoplakia and metastatic renal cell carcinoma. Rhinoscleroma is rare in Saudi Arabia and Bahrain. Awareness of possible clinical presentations and early diagnosis will significantly reduce the morbidity caused by this disease.


Abstract: Recent studies have identified genetic markers that may directly influence the risk of the coronary artery disease (CAD), in particular the renin angiotensin system genes. Since there are no existing data for the Tunisian population, we investigated the association between these polymorphisms (angiotensin-converting enzyme [ACE] insertion/deletion [Ins/Del]; the angiotensinogen T174M and M235T; and the angiotensin II type 1 receptor A1166C polymorphisms) and CAD in Tunisians. Study subjects comprised 341 cases and 316 age- and sex-matched healthy individuals. Clinical characteristics and other biochemical and environmental risk factors were collected for both. The distribution of the Ins/Del genotypes was significantly different between cases and controls (p = 0.049) with the genotype Ins/Ins identified as a risk, p = 0.02. Similarly, the distributions of the T174M and M235T genotypes were significantly different between cases and controls (p = 0.037 and 0.047, respectively) with 174 M/M and 235 T/T as the risky genotypes (p = 0.001 and 0.026, respectively). However, A1166C genotype frequencies were not significantly different between patients and controls. In conclusion, our results suggest that a significantly higher risk of CAD was associated with the Ins/Del, the M235T, and T174M polymorphisms; other environmental variables such as body mass index; and biochemical variables such as cholesterol.

Abboud N, Ghazouani L, Ben-Hadj-Khalifa S, Anabi F, Added F, Khalfallah A, Almawi WY,

Available at: http://www.ncbi.nlm.nih.gov/pubmed/?term=Human+platelet+alloantigens+HPA-1,+HPA-2,+and+HPA-3+polymorphisms+associated+with+extent+of+severe+coronary+artery+disease

Abstract: The contribution of human platelet antigen (HPA)-1 (GPIIb/IIIa), HPA-2 (GPIIb/IX), and HPA-3 (GPIIIa) polymorphisms to the risk of coronary artery disease (CAD) was investigated in 341 CAD patients and 316 matched control subjects. HPA genotyping was performed by PCR-SSP. Regression analysis was employed in assessing the contribution of these variants to CAD risk. The frequency of HPA-1b (P = .009) and HPA-3b (P = .004) alleles, and HPA-1a/1b (P = .045), HPA-1b/1b (P = .007), and HPA-3b/3b (P = .008) genotypes were higher in patients than control subjects. No significant association was demonstrated between the HPA variants and 1-, 2- and 3-vessel disease. HPA-1b/2a/3b (Pc = .021) and HPA-1b/2b/3a (Pc = .002) haplotypes were positively associated with CAD, thereby conferring a disease susceptibility nature to these haplotypes. Multivariate analysis confirmed the positive association of HPA-1b/2a/3b (aOR = 3.72; 95% CI = 1.49-9.28), and in addition identified HPA-1b/2a/3a (aOR = 2.49; 95% CI = 1.06-5.86) to be positively associated with CAD, after adjusting for a number of covariates. Our results demonstrate positive association of HPA variants and specific HPA-1/HPA-2/HPA-3 haplotypes with CAD in Tunisians.


Abstract: Background: Myocardial infarction (MI) is induced by acquired and inherited risk factors, including the plasminogen activator inhibitor-1 (PAI-1) -844G/A and -675G/A (4G/5G) gene variants. Objective: The aim of this study was to investigate the association between PAI-1-844G/A and 4G/5G polymorphisms and changes in PAI-1 and tissue plasminogen activator (tPA) levels in MI in a Tunisian population. Methods: This was a case-control study involving 305 patients with MI and 328 unrelated healthy controls. PAI-1 genotyping was done by polymerase chain reaction-restriction fragment length polymorphism (RFLP) (-844G/A) or by polymerase chain reaction-allele specific amplification. PAI-1 and tPA levels were assayed by serological assays. Result: In contrast to tPA levels, mean plasma PAI-1 antigen levels were higher in cases than in control subjects. The elevation in PAI-1 levels was more pronounced in -844A and 4G allele carriers. Significantly higher frequencies of (mutant) 4G and -844A alleles and 4G/4G and -844A/-844A genotypes, and corresponding lower frequencies of (wild-type) 5G and -844G alleles and 5G/5G and -844G/-844G genotypes were seen in patients than in controls. Increased prevalence of 4G/-844A and decreased prevalence of 5G/-844G haplotypes were seen in patients than in controls, thereby conferring a susceptibility and protective nature to these haplotypes, respectively. Regression analysis confirmed the independent association of 4G/4G and -844A/A with MI, after controlling for a number of covariates. Conclusion: This study indicated that the risk of MI was notably high in 4G and -844A carriers with elevated plasma PAI-1 and were
associated with reduced tPA levels.


Abstract: Objectives: Insofar as platelet membrane glycoprotein (GP) polymorphisms were identified as potential risk factors for coronary artery disease (CAD), we investigated the contribution of human platelet antigen (HPA)-1 (GPIIb/IIa) and HPA-2 (GPIb/IX) alleles and haplotypes to CAD pathogenesis. Methods: Study subjects comprised 247 middle-age CAD patients and 316 age-, gender-, and race-matched controls; HPA genotyping was performed by polymerase chain reaction with sequence specific primers. Results: The frequencies of HPA-1b (P<.001) and HPA-2b (P<.001) alleles and HPA-1a/1b (P<.001), HPA-1b/1b (P<.001), and HPA-2a/2b (P<.001) genotypes were higher in patients than control subjects. Select HPA haplotypes comprising the HPA-1b/2a (Pc=2.2 × 10(-4)) and HPA-1b/2b (Pc=0.001) haplotypes which were positively associated, and the HPA-1a/2a (Pc=3.2 × 10(-5)) which was negatively associated with CAD, confer a disease susceptibility and protective nature to these haplotypes. Multivariate analysis confirmed the positive association of HPA-1b/2a [adjusted odds ratio (aOR)=3.63; 95% CI=2.42-5.43] and HPA-1b/2b (aOR=2.92; 95% CI=1.43-5.94) haplotypes with CAD, after adjustment for a number of covariates. Conclusions: Our results suggest that HPA-1/HPA-2 haplotypes may be considered to be a major risk factor for CAD in middle-aged Tunisians.


Abstract: Aim: To determine the frequency of dysmenorrhea and its associated symptoms amongst a number of adolescent female students and to investigate the possible association between daily dairy product intake and dysmenorrhea. Methods: A self-assessment questionnaire was completed by 127 female university students aged between 19 and 24 years. Participants gave information that included demographics, the nature, type, and severity of pain associated with menstruation if any, management used to relieve dysmenorrhea, associated symptoms, and a general assessment of dietary intake of dairy products. Results: The prevalence of primary dysmenorrhea in the population studied was 87.4% with the majority of the participants' pain symptoms beginning a few days before and continuing through the first two days of menstruation. Forty-six percent of students were found to have severe dysmenorrhea. Abdominal bloating was the most frequently expressed symptom associated with dysmenorrhea amongst the population studied. Dysmenorrhea and associated symptoms were found in significantly fewer female students who consumed three or four servings of dairy products per day as compared to participants who consumed no dairy products. Conclusion: Primary dysmenorrhea is common in young women. This study helps us to better understand the relationship between low dietary intake of dairy products and the risk of dysmenorrhea.

Abstract: Intermittent fasting (IF), a type of feeding regimen where the frequency of eating is reduced, enhances cardiovascular stress adaptation and improves cardiovascular risk factors in rats. Data on the effect of IF on the endothelium is not common, so we examined whether IF showed similarity to documented beneficial effects of caloric restriction on endothelium-dependent vasodilatory responses of rat aortic rings. 25 young male Wistar rats had ad libitum (AL) access to food and 25 others were provided with food every other day for 2 months, during which their weight was measured every 2 weeks. Vascular reactivity of abdominal aorta was simultaneously evaluated using dual wire myographs. Weight gain was greater in the AL group (P<0.001) at all weighing intervals. Acetylcholine (ACh; 10(-6)-10(-5)M) produced greater (P<0.05) vasorelaxation in IF rats at the two highest concentrations. IF reduces weight gain in young male rats and improves their aortic endothelium-dependent vasorelaxation.


Abstract: The Kingdom of Bahrain considers education one of the most important sectors of human development. The government secondary schools’ physical education (PE) program provides students with regular physical activities in order to develop positive attitudes towards physical activity as part of day-to-day living. There is few data related to physical education and activity in Bahrain. Objective of the study: This study was conducted to provide information on the attitudes of high school students towards the physical education program. In order to increase the role of schools in improving adolescent health, and prevent chronic diseases as early as possible. Methodology: The study was conducted in Bahrain governmental secondary schools, and 475 students (Bahraini and non-Bahraini) of both genders were selected randomly from a total of 26 government high schools having a total population of 22,321 students. They were selected from the three main tracks for the academic year 2004-2005. Their ages ranged between 14-21 years. Results: The study revealed 68.5% of the students (both gender) had positive attitudes towards physical education, with a significant difference in attitude between male and female students. The main factors contributing to the students’ positive attitudes included curriculum 76.0%, self perception 70.9%, teacher 59.1%, class atmosphere 54.0%, and facilities 36.0%. Conclusion: Negative attitudes towards physical education were more among female students than males due to lack of physical education facilities and inadequate classroom’s atmosphere. Recommendations: Physical education hours needed to be extended and physical education facilities to be enhanced by increasing the financial resources.


**Abstract:** We evaluated the effects of pretransplantation recipient body mass index (BMI) on allograft survival and on kidney function. Kidney transplant recipients were grouped according to their pretransplantation BMIs: Group I (BMI<18.5 kg/m²; n=10); Group II (BMI 18.5-24.9 kg/m²; n=62); Group III (BMI 25.0-29.9 kg/m²; n=47); and Group IV (BMI>30.0 kg/m²; n=16). Excellent 1-year patient and graft survival rates were observed in all groups. Increased BMI was associated with increased hypertension and longer hospital stays. The incidence of acute rejection episodes, slow graft function, and delayed graft function, as well as the need for antithymocyte globulin Fresenius (ATG-F) rescue therapy were comparable between the 4 patient groups. The 1-year glomerular filtration rate was markedly different between the 4 patient groups. The 1-year posttransplantation glucose level was higher among obese patients compared with the other groups. A multivariate regression analysis confirmed the association of a higher 1-year GFR with obesity (BMI>30.0 kg/m²). Overweight and obese recipients showed excellent long-term patient and graft survival rates. Accordingly, denying patients renal transplantation because of obesity may not be justified.


**Abstract:** We investigated the effect of recipient age (RA) on kidney transplantation outcome in 107 transplant patients, with a follow-up of 1 year. Patients were divided in 3 groups: Group A (RA<50 years; 72 patients), Group B (RA 50-60 years, 19 patients), and Group C (RA>60 years; 16 patients). The rate and severity of acute rejection, infection rate and type, delayed graft function, hospital stay, creatinine levels (3, 6, 12 months), incidence at 1 year of post-transplant hypertension, cholesterol and triglycerides blood levels, and the rate of post-transplant surgical complications, and 1-year graft and patient survival were comparable between the 3 groups. However, creatinine blood level at 1 month and the 1-year fasting blood sugar were significantly higher in Group B. The RA does not seem to be of a significant predictive value, good selection and pre-transplant patient workout are important factors for a better outcome.


**Abstract:** It is generally acknowledged that anatomy is one of the basic medical sciences which form the essential foundations for the training of doctors in the discipline of medicine. In traditional medical courses over many years, dissection has been regarded as an essential and unique feature in the study of topographical anatomy but more recent developments in medical curricula and calls for change have challenged this approach so that many medical students now graduate without ever dissecting the human cadaver and yet appear to be competent and adequately prepared for postgraduate training. The abandonment of dissection is symptomatic of the ongoing debate and argument about how best to teach anatomy, since presently, there is a lack of consensus and scientific evidence in this area. Interest in anatomy and dissection has varied over the passage of centuries with peaks of interest followed by decline. Are we now witnessing another decline in the scientific merit of anatomy as a subject due to its failure to evolve and adapt quickly enough?
The AMEE guide No. 41 addresses in detail the debate and on-going arguments about how best to teach anatomy. It presents a careful review of the place of anatomy in medical education including its history as a discipline, and how it is learned, delivered and assessed in both traditional didactic and modern integrative medical curricula (Louw et al. 2009). The Guide also discusses the current challenges and future measures that need to be addressed to ensure the continued development of anatomy as a relevant subject in any medical curriculum.


Abstract: This study revisits the anatomy of the deep fascia over the distal leg, ankle, and dorsum of the foot. The arrangement of the deep fascia in these regions was recorded in 14 lower limbs of adult cadavers using photographs and drawings. The fascial layer from all three sites was subsequently removed in toto, and serial thickness measurements were made along its entire length. In addition, fiber disposition was studied under polarized light, and sections were stained to demonstrate collagen. The arrangement of deep fascia is complex. A common and novel finding at all levels is a crisscross, lattice-like arrangement of fibers. There was little evidence of the clearly defined sturdy band of the superior extensor retinaculum (SER) or of the Y-shaped inferior retinaculum (IER) commonly illustrated in topographical anatomy texts. The SER is a complex area with several thickenings commencing about 3 cm proximal to the tip of the lateral malleolus and gradually increasing to reach a maximum of 270 microm about 5 cm above the malleolus, then gradually returning to original thickness, about 9 cm above the malleolus. Fibers crossing diagonally to each other are a feature of the region. The IER characteristically has two forms: either a cross-shaped band (9 specimens) or a thickened "node" with small extensions radiating toward the malleoli (5 specimens), located about 1-2 cm distal to the lateral malleolus and centred over the common tendon of extensor digitorum where it has maximum thickness (430 microm). The deep fascia is thickened and firmly attached over both malleoli and to the tarsals and metatarsals along both borders of the foot. In general, the deep fascial structures were thicker in males than those in females.


Abstract: Background: The high percentage of ill-defined causes of death has always been a problem in Bahrain. This affects the quality of vital statistics and misguides policy makers when prioritizing heath problems and allocating resources in disease prevention and control. Objectives: The objectives of the study were to assess the knowledge and practices of physicians in the completion of death certificates at Salmaniya Medical Complex (SMC). Methods: The study group consisted of a cross-section of physicians at SMC. A simple random sample of 204 physicians was selected and a self-administered questionnaire, whose reliability was 0.7 based on Cronbach’s Alpha, was distributed. Results: The majority (91.3%) had MBBS as a qualification and
62.9% graduated in the year 2000 or in subsequent years. Forty-eight percent of the physicians had experience of 5 years or less and 51.1% were internal medicine specialists. Seventy-two percent of the respondents were unaware of the death certificate completion guidelines and 97.2% did not know the coding system used for the causes of death in Bahrain. Based on the criteria used for assessment of the respondents’ performance levels in completing death certificates, it was observed that 83.1% achieved a suboptimal level. Moreover, 81% of the physicians had not received any formal training in this regard during their practice. Conclusion: Physicians in SMC lack adequate knowledge, training and experience in completing death certificates. The accuracy of death certificates in SMC would improve if the process of death certification were revised in light of these factors, and that physicians received appropriate training to complete death certificates.


Abstract: Objective: To find the actual cause of death in death certificates that had ill-defined causes in 2006, evaluate the correctness of the completion of those certificates, and recommend ways to decrease the proportion of ill-defined causes of death in Bahrain. Methods: This was a retrospective review of all death certificates that had ill-defined as a cause of death (International Classification of Diseases-10 codes R0-R99) from January through December 2006 in Bahrain. RESULTS: Of the decedents with ill-defined causes of death in 2006, 76.7% were Bahraini, 70.6% males, 37% older than 70 years, and 62.7% died in their homes. The underlying causes of death of 92% were recorded as brought dead and cardiopulmonary failure. Of those whose place of death was recorded as brought dead”, 86% had died in their homes. Sixty percent of the death certificates were signed by Salmaniya Medical Complex (SMC) physicians and the remaining by forensic doctors and over half by senior residents. Of the death certificates retrieved at SMC, 60% were corrected, 47.4% of which were certified by doctors from the accident and emergency department, 31.5% from medical, and 21.1% from surgical departments. Conclusion: Death certification in Bahrain should be reevaluated by all stakeholders to improve the quality of mortality data. The revised policy should stress upon increasing the awareness of the physicians on the implications of inaccurate death certification.


Abstract: Estimation of the prevalence of the molecular markers of sulfadoxine/pyrimethamine (SP) and chloroquine (CQ) resistance and validation of the association of mutations with resistance in different settings is needed for local policy guidance and for contributing to a global map for anti-malarial drug resistance. In this study, malaria patients treated with SP alone (60) and SP with CQ (194) had a total treatment failure (TF) of 35.4%, with no difference between the two arms. The polymerase chain reaction-enzyme-linked immunosorbent assay (PCR-ELISA) method was used to identify polymorphisms in 15 loci in the dhfr, dhps and pfcr genes in a subset of 168 infections. The results revealed a similar frequency of all single
nucleotide polymorphisms (SNPs) in the two arms, except dhps 581G, which was overrepresented in infections that failed to respond to SP alone (TF). In all infections, a high frequency of dhfr CICNI haplotype (51I and 108N) was found, but without discrimination between the adequate clinical and parasitological response (ACPR, 75.6%) and TF (82.9%). Similarly, the dhps SGEAA haplotype (437G and 540E) (ACPR, 60.5%; TF, 65.9%) and the combined CICNI/SGEAA haplotype (ACPR, 50%; TF 55%) were not associated with TF. In contrast to other studies in Africa, the triple 51I/59R/108N mutation was rare (0.6%). In addition, the pfcrt CVIET haplotype (93%) was found to be associated with the CICNI/SGEAA haplotype. Finally, these data represent a baseline for SP resistance molecular markers needed before the deployment of SP/artesunate combination therapy in the Sudan.


Available at: http://www.ncbi.nlm.nih.gov/pubmed/17768641?dopt=Citation

Abstract: The severe malaria (SM) and uncomplicated malaria (UM) infections are expected to have different genetic makeup. In this study, blood samples were obtained from 325 donors with SM and UM and malaria-free donors (including asymptomatic submicroscopic malaria-ASUM), from Eastern Sudan. The SM group included patients with cerebral malaria (CM), severe malarial anemia (SMA), and other complications. The MSP2 locus was exploited for parasite genotyping. We found that the genetic diversity of the parasite population was marked (51 genotypes). The overall multiplicity of infection (MOI) was 1.5, and it was comparable between SM and UM. However, the MOI in ASUM (1.0) and fatal CM (1.14) was comparable and significantly lower than in UM (1.53), SMA (1.52), and nonfatal CM (1.7). The ratio of the IC1 to FC27 allele families was comparable between SM and UM, and the distribution of the allele sizes was correlated (correlation coefficient = 0.59 and 0.718; P < 0.001). It is interesting to note that the FC27 genotype was overrepresented in ASUM (68.2%) and was not recognized in fatal CM, while in mixed-clone infections, the clearance of IC1 after quinine treatment was faster than FC27 clearance. Finally, the composition of the multiclonal infections (IC1 and FC27) was suggesting a stronger cross-immunity within rather than between MSP2 gene families.


Abstract: In this study we intended to examine the extent of genetic diversity of Plasmodium falciparum parasites causing severe malaria (SM). For this purpose, 100 parasite isolates were obtained from patients with SM and uncomplicated malaria, from an area of low and unstable malaria transmission in Sudan. The diversity of infection (DOI) was estimated by relating the number of the different parasite genotypes that were detected to the total number of parasites that were genotyped (parasite population/subpopulation). We used different molecular markers individually (pfcrt-76, pfmr1-86, GLURP size and MSP2 family and size) and as a group to set a multilocus genetic profile for each parasite isolate. The DOI as estimated by MSP2 and GLURP was 0.553 and 0.435, respectively. However, combination of all four molecular markers
A multilocus genetic profile revealed a fingerprint pattern of genetic diversity with a DOI of 0.936, indicating that in SM infection, diversity is the rule and homogeny is the exception. Furthermore, our clinical data suggest that the virulence markers might also be more diverse than expected. In conclusion, the results are unexpected and overturn the assumption that parasites causing SM are a limited subpopulation of virulent parasites or of a clonal nature. However, it was more likely that there was a genetically unique parasite in each infection.


Available at: http://www.malariajournal.com/content/6/1/108

Abstract: Background: The Plasmodium falciparum dihydrofolate reductase (DHFR) and dihydropteroate synthetase (DHPS) are enzymes of central importance in parasite metabolism. The dhfr and dhps gene mutations are known to be associated with sulphadoxine/pyrimethamine (SP) resistance. Objective: To investigate the effects of dhfr/dhps mutations on parasite characteristics other than SP resistance. Method: Parasite infections obtained from 153 Sudanese patients with uncomplicated falciparum malaria treated with SP or SP + chloroquine, were successfully genotyped at nine codons in the dhfr/dhps genes by PCR-ELISA. Results & conclusion: Mutations were detected in dhfr at N51I, S108N and C59R, and in at dhps at A/S436F, A437G, K540E and A581G, the maximum number of mutations per infection were five. Based on number of mutant codons per infection (multiplicity of mutation, MOM), the infections were organized into six grades: wild-types (grade 0; frequency, 0.03) and infections with MOM grades of 1 to 5, with the following cumulative frequency; 0.97, 0.931, 0.866, 0.719, 0.121, respectively. There was no significant association between the MOM and SP response. Importantly, immunity, using age as a surrogate marker, contributed significantly to the clearance of parasites with multiple dhfr/dhps mutations. However, these mutations have a survival advantage as they were associated with increased gametocytenogenesis. The above implications of dhfr/dhps mutations were associated with MOM 2 to 5, regardless of the gene/codon locus.


Abstract: In this study, antibodies (Ab) directed against three MSP antigens; MSP1(19), MSP2(A), and MSP2(B) were analyzed in blood samples obtained from 223 Sudanese patients who presented with either severe malaria (SM) or uncomplicated malaria (UM) and from 117 malaria-free donors (MF). The results showed that the prevalence of MSP Abs was associated with the clinical outcome of malaria infection, and the Ab prevalence was age-dependent (P<0.0005). More importantly, the prevalence of MSP Abs against the test antigens was lower in SM compared to UM (P=0.001 to 0.020), suggesting a protective role for these Abs against SM. Furthermore, the Ab responses between individual complications of SM were significantly different.
A-Elgayoum SM, El-Rayah EA, Giha HA. Validation of PCR for detection and characterization of parasitaemia in massive splenomegaly attributed clinically to malaria infection. Diagnostic Microbiology and Infectious Disease 2011; 70(2): 207-212.


Abstract: In this study, 101 patients with massive splenomegaly (MS) and 41 with moderate splenomegaly (MoS) from Kassala, Eastern Sudan, were included. The patients were recruited during a peak and the end of a malaria season and during a dry season between 2007 and 2008. Based on clinical findings and exclusion of other causes of MS, the former patients were presumed to be infected with malaria parasite; thus, the condition was termed as massive malarial splenomegaly (MMS). Rapid diagnostic test (RDT) and polymerase chain reaction (PCR) were used for malaria parasite detection. In the MMS group, the parasite rate was 50% and 49% as estimated by microscopy and RDT, respectively. However, the PCR showed higher parasite rate (79.3%, P=0.000), Plasmodium vivax infection, and mixed infections. The PCR-corrected parasite rate in the MoS and control groups was 73.2% and 3.5%, respectively. The parasite rate as estimated by microscopy was highest at the end of the malaria season and lowest in the dry season; however, the parasite rate estimated by PCR was stable in all study periods. There was significant reduction in spleen size following anti-malaria treatment. In conclusion, the use of PCR had revealed significantly higher parasite rate, P. vivax, and mixed infections in MMS as compared to microscopy, while the RDT was found to be comparable to microscopy and is suggested to complement the use of the latter. The study also disclosed a seasonal variation of patent parasitemia with an overall low parasite count and scarce gametocyteemia in MMS.

A-Elgayoum SM, El-Rayah EA, Giha HA. In areas of low transmission, is the presumptive treatment of febrile but blood smear negative patients for malaria validated by the results of PCR-based testing? Ann Trop Med Parasitol 2010; 104(7): 573-581.


Abstract: Presumptive malaria treatment (PMT) is a common strategy in many areas of the world, especially in settings where the facilities for diagnosis are limited. The subjects of a recent study in central Sudan, in an area with a low level of Plasmodium falciparum transmission, were 322 individuals who had each presented at one of seven suburban health facilities, complaining of repeated febrile episodes. Although all were found blood smear-negative for malarial parasites, all were presumptively diagnosed as cases of malaria and prescribed artemisinin-based combination therapy. When pretreatment samples of blood were, however, checked for P. falciparum histidine-rich protein 2, using a rapid diagnostic test (RDT), and for Plasmodium DNA, using a PCR-based assay, only one (0.03%) of the cases was found RDT-positive and none was
found PCR-positive. Although more studies are needed, in different areas and seasons, to see if these results mirror the general situation, it appears that the wide use of PMT in central Sudan, among patients who are bloodsmear-negative, is unjustified, of little, if any, benefit, and a waste of resources that are already limited. An international consortium for the revision of the conceptual aspects of malaria diagnosis and PMT is suggested.


Abstract: Invasive procedures for diagnostic or therapeutic purposes bear a relative risk of transmission of serious blood borne infectious disease. In this study, a noninvasive approach to malaria diagnosis using polymerase chain reaction (PCR) for the detection of parasite DNA in saliva, buccal mucosa and urine (alternative samples) was examined. Saliva, buccal mucosa and urine samples were collected simultaneously with blood samples from 93 patients with microscopically confirmed Plasmodium falciparum infection. Species-specific primers detected the parasite DNA only in blood samples. However, when the PCR analysis was repeated using MSP1 and MSP2 primers in a subgroup of 21 complete sets of samples, the parasite DNA was detected in all except 3 samples, which were found to be negative with the MSP2 primers. Parasite density, body temperature or patient age did not influence the PCR results. In conclusion, P. falciparum parasite DNA was detected equally in saliva, buccal mucosa and urine of malaria patients, regardless of their ages, body temperatures or parasite density. Surprisingly, the parasite DNA was not amplified by species-specific primers in the alternative samples whereas it was in the blood samples.


Abstract: Objective: To examine the kinetic ability of embryonic human epithelial INT-407 cells to express messenger ribonucleic acid mRNA for various cytokines and chemokines in response to Campylobacter jejuni C. jejuni stimulation. Methods: In an experimental single-blind study, cultured embryonic human epithelial INT-407 cells were treated with different concentrations of viable C. jejuni, its sonicated, and filtered supernatant. A modified non-radioactive in situ hybridization using probe cocktails was used to measure mRNA levels for the pro-inflammatory cytokines interleukin IL-1beta, IL-6, interferon-gamma IFN-gamma, tumour necrosis factor TNF-alpha, transforming growth factor TGF-beta1, and IL-8, and the anti-inflammatory cytokines, IL-4 and IL-10. The study was carried out from September 2005 to March 2007 at the Department of Microbiology, Immunology, and Infectious Diseases, College of Medicine, Arabian Gulf University, Bahrain. Results: Viable C. jejuni, sonicated bacteria and filtered supernatant induced high mRNA expression for the pro-inflammatory cytokines IL-
I beta, IL-6, IFN-gamma, TNF-alpha, TGF-beta1, and IL-8, which peaked at the 12 hours post stimulation. Anti-inflammatory cytokines IL-4 and IL-10 mRNA expression were induced maximally at 3 hours post stimulation mainly by sonicated bacteria and filtrated supernatant, however, not with living bacteria. Untreated embryonic human epithelial INT-407 cells expressed low amount of mRNA for the various cytokines and chemokines at all time points. For each cytokine, 4 samples were used per time hour. Conclusion: This study demonstrated that embryonic human epithelial INT-407 cells in response to viable C. jejuni or its cytotoxins can alter cytokine and chemokine mRNA expression patterns and kinetics suggesting a potential role for theses mediators in the immunopathogenesis of the infection caused by this pathogen, which might be relevant for future immunotherapeutic interventions during severe bacterial infections.


Abstract: Differentiation between campylobacter jejuni and campylobacter coli is problematic in clinical specimens due to fastidious growth requirements and limited biochemical tests. This study describes a rapid, multiplex PCR protocol for the direct detection and differentiation of C. jejuni and C. coli in stools. An evaluation was carried out of this multiplex protocol based on the detection of cadF (genus specific), and hipO (C. jejuni) and asp (C. coli) genes, using stool from patients with campylobacter enteritis and chicken. Protocol sensitivity was assessed and specificity determined using a panel of enteric bacteria, and evaluation of 30 diarrhoeic stool specimens culture negative for campylobacter. Of the 114 specimens (54 human and 60 chicken) evaluated by the protocol, 70 (61.4 %) were identified as C. jejuni, 35 (30.7 %) as C. coli and 9 (7.9 %) as a mixed infection/colonization with both species. All mixed infections were identified as C. jejuni by culture. Among the stool specimens that were culture negative for Campylobacter, two (6.7 %) were C. jejuni positive by multiplex PCR. The protocol sensitivity limit was 0.015-0.016 ng C. jejuni and C. coli DNA mul(-1) in the specimen. There was no cross-reaction with the reference strains assessed. Comparison of hippurate test and multiplex PCR demonstrated 17 isolates with false-positive hippurate enzymic activity and 7 with false-negative activity. This rapid protocol (turnaround time 6 h) is highly sensitive and specific for direct evaluation of stool for these pathogens. It has significant application for routine clinical diagnostic and epidemiological purposes.


Available at: http://www.bahrainmedicalbulletin.com/issue_march2010.htm

Abstract: Objective: The aim of the study was to evaluate the prevalence of generalized anxiety disorder and depression and their treatment in a cross national sample of primary care patients. Setting: Four primary health care facilities in four Governorates, in the Kingdom of Bahrain. Design: Clinical survey. Method: Four primary health care facilities in four Governorates participated in one stage screening process to identify prevalence of generalized anxiety disorder and depression. Structured diagnostic interviews among 300 consecutive attendees in one day was used.
The Mini International Neuro psychiatric Investigation (MINI) was used as screening tool. The association of depression and anxiety with factors such as age, sex, education and employment were evaluated. Result: Generalized anxiety disorders prevalence rate was 52 (17.3), life time depression was 58 (19.3%) and current depression was 17 (5.6%). Only 22 (7.3%) of the sample had either anxiety or depression in the past, of whom 41% received treatment. None of the examined factors was significantly linked to anxiety or depression. Conclusion: This study shows that generalized anxiety disorder and major depressive episode are very common among primary care attendees. Thus, primary care physicians should be alerted of this fact. A multifaceted program should be adopted for the detection and management of GAD and depression.


Abstract: A combination of social, legal, and religious factors make reporting of suicide difficult in Bahrain, an Islamic country. Limited available data indicates a very low incidence rate of 3 per 100,000. The objective of the present study was to describe the pattern of suicide in Bahrain during a 10-year period. The registered suicide cases (N = 304) at the Ministry of Interior for the 10-year period from 1995 to 2004 were reviewed and analyzed. The mean suicide rate was 0.6 per 100,000 for the Bahraini nationals and 12.6 per 100,000 for the non-Bahrainis with and 17.7 per 100,000 for the Indian migrants. Men were six times more likely than women to commit suicide. The majority of the subjects were under 35 years of age with financial domestic problems being the most common reason reported in the record and hanging the mostly commonly used mode of suicide (92.8%). The suicide rate for the Bahraini population remains low compared to other countries. The higher rate of suicide among Indians merits further investigation. Moreover, more research is needed on the epidemiology of suicide risk factors in ethnic groups for further prevention and intervention.


Abstract: Background: Ischemic brain stroke is associated with chronic inflammation and elevation of several cytokines such as Tumor Necrosis Factor alpha (TNF-α) and Interleukin (IL)-8 (IL-8) which are correlated with CNS injury and stroke. Chlamydia pneumoniae (CP) was suggested to be an independent risk factor for stroke. Atherosclerosis may be a manifestation of chronic or persistent CP infection in the atherosclerotic plaque. Objectives: To investigate the effect of live CP and chlamydial lipopolysaccharide (LPS) on the production of TNF-α and IL-8, and to study the levels of anti-CP IgG antibodies in the first acute ischemic stroke patients.
Methods: Venous blood samples were collected in EDTA tubes from patients who had first time acute ischemic stroke (n=14) and from healthy subjects (controls) (n=14). Leukocytes were isolated and cultured either non-stimulated or stimulated with chlamydial LPS and live CP. Intracellular cytokine production was detected by immunocytochemistry. Anti-CP IgG and IgA antibodies were detected by enzyme immunoassay (EIA). Results: The data showed significant increase of chlamydial
stimulated and non-stimulated TNF-α and IL-8 production in patients compared to control (P<0.03). There were a significant increase in anti-CP IgG antibodies in stroke patients compared to controls (P<0.0069). Conclusion: The study concluded that pathological changes in acute brain stroke might be a consequence of CP infections that mediated by induction of potential proinflammatory cytokines.


Abstract: Background: Vaso-occlusive crisis (VOC) is the most common complication in sickle cell disease (SCD); it causes a wide spectrum of end-organ damage, a process found to be mediated by inflammatory responses. Through activating endothelial and immune cells, Chlamydia pneumoniae (Cp) infection was postulated to be a factor in the morbidity of acute chest syndrome in sickle cell patients (SCP). Objective: To provide serological evidence of a possible role of Cp in VOC in SCD by investigating the occurrence of Cp IgG and IgA antibodies in SCD patients compared to control subjects. Design: Open Controlled Trial. Setting: Bahrain Defense Force Hospital and Princess Al-Jawhara Center for Molecular Medicine, Arabian Gulf University Bahrain. Method: Venous blood samples were collected from one hundred and twelve patients who had acute phase of VOC and from one hundred and twelve controls. Anti-Cp IgG and IgA antibodies were detected by using species specific Cp IgG and IgA enzyme immunoassay (EIA) kits, in both patients and controls sera. Parametric comparisons were performed using t-test. Result: The results showed a significant difference in Cp IgG and IgA antibodies prevalence between patients and controls (P<0.0001). Dual Cp IgG and IgA seropositive were higher in patients than controls. Conclusion: The study provided serological evidence of a possible role of Cp infection in VOC in the SCD.


Abstract: Stroke is associated with elevation of several proinflammatory cytokines such as tumor necrosis factor alpha (TNF-alpha) and interleukin (IL)-8 that are correlated with central nervous system (CNS) injury. Anti-platelet therapies are important agents in stroke management. The role of antiplatelets as anti-inflammatory agents is not known in acute stroke patients. Furthermore, their effect on induction of potential cytokines as TNF-alpha and IL-8 in those patients is still not clear. Thus, we herein examined the induction of TNF-alpha and IL-8 in acute stroke patients and examined the effects of the antiplatelets drugs aspirin, clopidogrel and dipyridamole, and piracetam in their induction. Cytokines were detected intracellularly in leukocytes from patients who had first acute ischemic stroke and from matched controls by immunocytochemistry. The results showed significant increase of spontaneously produced TNF-alpha and IL-8 in patients compared to control. This induction was significantly inhibited differently by each drug and dual drug agents. The data of this work suggest that antiplatelets agents may have a role in inhibition of stroke mediated proinflammatory cytokine effects, which may initiate a new aspect of the role of
antiplatelets in the treatment of acute ischemic stroke.


Abstract: Objective: In this study, the role of Chlamydia pneumoniae in triggering platelets to induce the inflammatory potential chemokines CCL3, CCL5, CCL7 and CXCL8 in atherosclerotic patients was investigated. Subject and methods: Venous blood from control subjects (n=35) and atherosclerotic patients (n=35) was collected in tubes with and without EDTA. Platelets from controls and patients were separated from whole blood and then stimulated with lipopolysaccharide (LPS), live C. pneumoniae and heat-treated C. pneumoniae. The ability of C. pneumoniae and its LPS to stimulate platelets and expression of CCL3, CCL5, CCL7 and CXCL8 was assessed with immunofluorescence. Immunosorbent assays were used to detect anti-C pneumoniae antibodies in sera from patients and healthy subjects. Results: Nonstimulated platelets from patients showed significant expression of CCL3, CCL5, CCL7 and CXCL8 compared to controls (p < 0.0001). Stimulation of platelets from patients with live and heat-treated C. pneumoniae and its LPS demonstrated significant induction of chemokines compared to similarly stimulated platelets from controls (p < 0.01). After stimulation with heat-treated C. pneumoniae chemokine expression in platelets from controls was significantly lower than after stimulation with live C. pneumoniae (p < 0.01), which was not the case when platelets from patients were stimulated. Increased levels of anti-C. Pneumoniae antibodies were detected in sera from patients compared to healthy subjects, suggesting prior C. pneumoniae exposure. Conclusion: Our data demonstrated an interactive link between C. pneumoniae and platelets in atherosclerotic patients, leading to induction of potential chemokines and possibly disease development.


Abstract: Objective. Vascular endothelial growth factor (VEGF) is a pro-angiogenic factor. Variability in VEGF expression, induced by specific VEGFA variants, are involved in angiogenesis-related disorders. This study examined the genotype distribution and functional role (VEGF expression) of rs699947, rs833061, rs1570360, rs2010963, rs833068, rs833070, rs3025020, and rs3025039 VEGFA variants and their haplotypes in 519 healthy Bahraini individuals of both genders. Methods and results. The distribution of the eight VEGFA polymorphisms screened was in Hardy-Weinberg equilibrium. The minor allele frequencies of rs699947 (0.42), rs833061 (0.32),
rs1570360 (0.31), rs2010963 (0.33), rs833068 (0.37), rs833070 (0.42), rs3025020 (0.33), and rs3025039 (0.13) were generally compared to those established for Caucasians. Of the variants tested, rs3025020 was associated with increased VEGF serum levels (p=0.019), while rs3025039 was associated with decreased levels (p=0.038). Linkage analysis identified two VEGFA blocks, the first, spanning 16 kb, was not associated with altered VEGF levels, while the second, spanning 3 kb containing rs3025020 and rs3025039, was linked with higher VEGF expression, of which the -583 T / +936 T haplotype (p=0.008) was linked with higher VEGF levels compared to the -583C/ +936C(all wild-type) haplotype. Conclusion. These results support the association of rs30250202 and rs3025039, and specific VEGF haplotypes, with altered VEGF serum levels, although the exact functional mechanisms remain to be elucidated.

Available at: http://www.arabipsychiat.com/index.php?option=com_content&view=article&id=63:vol21-no1-may-2010-&catid=1:volumes-a-articles&Itemid=2

Abstract: Objectives: To determine the degree of agreement of the OPCRIT diagnostic systems in the diagnosis of schizophrenia. Method: A total of 112 case notes (67.9% men and 32.1% women), of Bahraini schizophrenic patients with ICD-10 classification formed the schizophrenic population for this study. These 112 patients who were analyzed attended the out-patient department at the Psychiatric Hospital in Bahrain until the year 2008. The OPCRIT 3.31 checklist was applied as a diagnostic tool. The kappa coefficient and percentage of agreement were used to measure the concordance and absolute agreement of the OPCRIT diagnostic systems of schizophrenia. Results: The diagnoses of schizophrenia using ICD 10, DSMIII-R. Research Diagnostic Criteria (RDC) and Tsung and Winokur (TS and WI) all have strong and excellent agreement with each other. The strongest is between RDC and TS &WI (Kappa 0.936). The diagnosis of Schneider (SCHN), French (FREN), CROW and Farmer (FARM) all have low kappa values of agreement (less than 0.4) with other diagnoses except FREN with DSMIII-R (0.451). The absolute percentages were high for all diagnostic systems except for the diagnosis of CROW. Conclusion: The diagnostic systems of ICD-10, DSMIII-R, RDC, and TS and W1 have strong diagnostic agreements (kappa < 0.780). The strongest is between RDC and TS & W1 (kappa0.936), while Schneider French, Crow, and Farmer have low diagnostic agreements (Kappa>0.4). However, French and DSM/III-R maintained higher diagnostic agreement (Kappa 0.451). Results direct the need for a cautious level of confidence and validity of officially designated classification systems.


Abstract: The college of Medicine and Medical Sciences (CMMS) at the Arabian Gulf
University (AGU) is amongst the first medical schools in the Arab World to implement OSCE in undergraduate assessment of Psychiatry. Despite the matured implementation of OSCE, as a valuable assessment tool, in other medical fields it remains a novelty in terms of its application in Psychiatry. This paper provides a description of assessment methods at CMMS with particular emphasis on the use of OSCE, its content, examination structure, and learning outcomes and conclusions derived from implementation and application of the program. Overarching results indicate that OSCE is a valid and fair test of the immediately relevant abilities relevant to their future careers within the medical field of practice.


**Abstract:** Introduction: Coronary Artery Disease (CAD) continues to be the leading cause of morbidity and mortality in developed countries. It is of particular concern in the aviation industry since it can result in sudden incapacitation. Moreover, it is the leading cause of pilot grounding. The aim of this study was to determine the prevalence of modifiable CAD risk factors among Gulf air pilots in Bahrain. Method: All the pilots attending the Gulf Air clinic for their routine medical (253 pilots) were asked to fill an anonymous self administered questionnaire and were examined for weight, height and blood pressure. In addition past medical history and laboratory results were recorded. The CAD risk status was assessed using the Framingham score sheets. Results: The prevalence of hypertension and diabetes mellitus were low while half of the pilots were overweight or obese. As for the other CAD risk factors, smoking, high triglyceride levels, hypercholesterolemia, and not performing regular exercise the prevalence rates were 26.1%, 43.6%, 7.1% and 17.1%, respectively. 6.3% of the pilots had a calculated CAD risk acceptable for their age while 8.1% and 85.6% had a higher and lower risk, respectively. Conclusion: Many pilots were found to be having high rates of CAD risk factors. Well structured primary and secondary preventive programs for pilots like smoking cessation, modifying dietary habits and promoting regular exercise should be initiated. An evaluation of the recommended preventive programs should follow.


**Abstract:** Bahrain has one of the highest incidence rates of type 2 diabetes mellitus (T2DM). Development of diabetic nephropathy (DN) as a complication was noticed in some patients while absent in others. This interesting observation raises the role of certain genetic risk factors for the development of DN. Angiotensin-converting enzyme
(ACE) insertion/deletion (I/D) polymorphism was found to be associated with T2DM. While some patients have predisposition to DN in the population, others have negative association. The present case-control association study was designed to investigate the association of ACE I/D polymorphism in T2DM patients in Bahrain especially in those who developed DN. A total of 360 T2DM patients (110 with DN and 250 without DN) and 360 healthy (non-diabetic) age-matched subjects were recruited for this study for comparison. The presence (insertion)/absence (deletion) (I/D) polymorphism of a 287-bp Alu1 element inside intron 16 of the ACE gene was investigated using PCR-gel electrophoresis. The results show that the distribution of the homozygote DD genotype of the ACE gene was high among Bahraini T2DM patients compared to the healthy non-diabetic subjects. In addition, the distribution of the deletion (D) allele was high among Bahraini T2DM patients with DN when compared to the healthy non-diabetic subjects. However, there was no significant difference in the distribution of ACE I/D allele and genotypes between DN patients when compared to those T2DM patients without DN. The results obtained in this study are in closely agreement with some previous reports which show a strong association of ACE polymorphism with T2DM patients, yet not a risk factor for development of DN.


**Abstract:** To evaluate the frequency rate and site of origin of multiple primary malignancies (MPM) in Bahrain from 1952 to 2004. Design: Retrospective study. Setting: Pathology Department, Salmaniya Medical Complex, Bahrain. Method: Confirmed malignancies diagnosed in Bahraini patients from 1952 to 2004. The diagnoses are based on histopathology and hematology archives of the government, private hospitals and clinics. Result: Six thousand nine hundred and nineteen cancer patients were found in the archives, 122 (1.7%) had MPM; 31 (25%) had synchronous and 91 (75%) had metachronous lesions, the annual frequency rate was 2.3 patients/year. Equal M: F ratio was found, but males had more synchronous while females had more metachronous, double and triple cancers lesions. Sixty percent of all cancer patients were above the age of 50 years compared to 69% in all MPM patients, (74%) in synchronous, (67%) in first age metachronous and (77%) in second age metachronous lesions. The three most common metachronous MPM occurred in association with cancers of breast (21%), urinary tract (17%) and prostate (8%). Amongst males the commonest combinations occurred in association with cancers of urinary tract (28%), prostate (16.3%) and kidney (7%). Amongst female breast (38%), thyroid (10.4%) and urinary tract (6.3%) were the most common. Conclusion: These results are reflection to the overall cancer pattern in Bahrain and may not apply to other regions or countries.


Abstract: Objectives: To examine the attitude of faculty towards integrated assessment and the factors which influence integrated assessment in a problem-based medical school. Methods: A self administered questionnaire was used to determine faculty attitude towards integrated assessment and the factors which influence integrated assessment. Results: The reliability of the questionnaire items which were concerned with the attitude towards integrated curriculum was high (0.78). The respondents agreed with the importance of integrated curriculum and integrated assessment. The major obstacles to integrated student’s assessment included time constraints (31%), teamwork difficulties (29%), lack of familiarity with integrated assessment (24%) and lack of training (21%). Thirty eight percent of those faculty who responded to the open ended questionnaire felt that training and workshop for the teachers are important strategies to ensure integrated assessment of students.

Conclusion: The respondents agreed with the importance of integrated curriculum and assessment. They perceived that time constraints, teamwork difficulty, and a lack of training and familiarities in constructing integrated test items as a major obstacle for integration in assessment. They emphasized the need for faculty development programs, focus on teamwork and increase in number of dedicated faculty as strategies for further enhancing integrated student assessment.


Abstract: During a search for glucose-regulated abundant mRNAs in the diabetic rat kidney, we cloned thyroid hormone binding protein (THBP), also known as mu-crystallin or CRYM. The aim of this study was to investigate the effect of hyperglycemia/high glucose on the expression of THBP. THBP mRNA copy numbers were determined in kidneys and hearts of diabetic GK rats vs normoglycemic Wistar rats, and in human mesangial cells (HMCs) exposed to high glucose using real-time qPCR, and THBP protein levels were measured by Western blotting and immunofluorescence. Intracellular ROS was measured in THBP transfected cells using DCF fluorescence. Hyperglycemia significantly increased THBP mRNA in GK rat kidneys (326+/−50 vs 147+/−54, p<0.05), and hearts (1583+/−277 vs 191+/−63, p<0.05). Moreover, the levels of THBP mRNA increased with age and hyperglycemia in GK rat kidneys, whereas in normoglycemic Wistar rat kidneys there was a decline with age. High glucose significantly increased THBP mRNA (92+/−37 vs 18+/−4, p<0.005), and protein in HMCs. The expression of THBP as a fusion protein in transfected HMCs resulted in reduction of glucose-induced intracellular ROS. We have shown that THBP mRNA is increased in diabetic kidney and heart, is regulated by high glucose in renal cells, and appears to attenuate glucose-induced intracellular ROS. These data suggest that THBP may be involved in the cellular pathways activated in response to glucose. This is the first report linking hyperglycemia with THBP and suggests that the role of THBP in diabetic complications should be further investigated.

Abstract: Medical tourism is the practice of patients seeking health care services from an area outside their home country. In recent years, medical tourism has rapidly grown for the following reasons: (a) inadequate access to health care services at home country; (b) the treatment is not covered by health insurance providers; (c) the service is available at a much lower cost elsewhere; and (d) long waiting period to get access to care as a result of overburden on public healthcare system at home country. Complicated urgent surgeries and elective procedures are the most frequently sought procedures by patients as medical tourists. Polypharmacy is the prescription, administration, or use of more medications than are clinically warranted. Polypharmacy has been shown to predispose patients to drug-drug interactions, adverse drug reactions, and poor patient compliance. We present a case of polypharmacy associated with medical tourism in a middle-aged Bahraini who sought treatment for diabetes mellitus from a well known hospital promoting medical tourism services in a south-east Asian country.


Abstract: Background: Infants and children are at a high risk for medication errors. Objectives: This retrospective study was conducted to determine the type and prevalence of prescribing errors related to pediatric iron preparations prescribed in primary care in Bahrain. Methods: Prescriptions issued for infants and collected at 20 health center pharmacies for 2 weeks were audited, specifically for errors. Results: Of 2,282 prescriptions dispensed for infants (mean age 9.14 +/- 0.91 months), 159 (7.0%) included an iron preparation. Iron preparations were mostly prescribed (90.6%) with brand names, several of which were neither listed in the primary care drug list nor were available as pediatric dosage forms. 42 (26.4%) prescriptions were issued without specifying the dosage forms, 14 (8.8%) without the duration of therapy and 4 (2.5%) without dosage. Iron dosage was stated as metric volume (ml) and metric weight (mg elemental iron) units in 78.6% and 9.4% of the prescriptions, respectively. The mean elemental iron (+/-SD) prescribed for treating anemia was 4.5 +/- 1.7 mg/kg body weight. A significant difference was observed between physicians and nurses regarding the amount of elemental iron prescribed for treating anemia. Conclusions: Prescribing of multiple brands of pediatric iron preparations unavailable in the primary care drug list and in pediatric dosage forms, prescribing iron as inconvenient decimal fractions (metric volume units), and omission errors in prescriptions, were common. This may be related to poor communications between the prescribers and the pharmacy services and a lack of information dissemination on newly introduced iron formulations. Moreover, frequent changes in brand availability in primary care may have created confusion for
prescribers. The communication between pharmacy services and prescribers should be strengthened, and the procurement of multiple brands should be discouraged. A better management of drug supply and effective policies to minimize prescribing errors are needed in Bahrain.


Available at: [Link](http://www.ncbi.nlm.nih.gov/pubmed/?term=Al+Khaja+KAJ%2C+Al-Haddad+MK%2C+Al-Offi+AR%2C+Abdulraheem+MH%2C+Sequeira+RP.+Use+of+dextropropoxyphene+%2B+acetaminophen+fixed-dose+combination+in+psychiatric+hospital+in+Bahrain%3A+is+there+a+cause+for+concern%3F+Fundam+Clin+Pharmacol+2009%3B+23(2)%3A+253-8)

Abstract: There are concerns about the safety of the dextropropoxyphene and acetaminophen fixed-dose combination, particularly in patients with psychiatric morbidity, which has led to a phased withdrawal of this fixed-dose combination in many countries. A retrospective prescription audit was conducted to evaluate the dextropropoxyphene + acetaminophen fixed-dose combination prescribing pattern in the major psychiatric hospital of Bahrain. The data analysis was performed using SPSS/PC+ version 14.0. Prescriptions with the dextropropoxyphene + acetaminophen fixed-dose combination comprised 11.8% of all dispensed prescriptions and in most instances for outpatients undergoing substance abuse rehabilitation. Nearly half of the patients received >or=20 tablets of this fixed-dose combination (mean +/- SD: 30.9 +/- 13.1; range 20-126) as multiple doses. The dextropropoxyphene + acetaminophen fixed-dose combination was often co-prescribed with psychotropics, such as benzodiazepines (BZDs) (25.4%), BZDs + antidepressants (62.9%), BZDs + antipsychotics (3.7%) and BZDs + anticonvulsants (1.9%). Approximately 40% of prescriptions with the dextropropoxyphene + acetaminophen fixed-dose combination were written 'as required' (prn), basis. Despite poor safety and efforts to restrict or withdraw worldwide, the dextropropoxyphene + acetaminophen fixed-dose combination continues to be irrationally prescribed to outpatients undergoing substance abuse rehabilitation in Bahrain. Health policy decision-makers should introduce a phased withdrawal of this drug from clinical use. In the meanwhile, it is important to create awareness among prescribers of the risks associated with over-dosage of the dextropropoxyphene + acetaminophen fixed-dose combination and its interaction with other psychotropic medications.


Abstract: Purpose of the study: To evaluate the prescription writing skill of final year residents in a family practice residency programme (FPRP) in Bahrain, and to compare skill of residents who have graduated from medical schools with problem based learning (PBL) versus traditional (non-PBL) curricula. Study design: Prescriptions issued by the residents were prospectively collected for two consecutive cohorts in May 2004 and May 2005. Prescription errors were classified as errors of omission (minor and major), commission (incorrect information) and integration (drug-drug interactions). Results: In 69.6% of medications with major omission errors, dosage form (39.4%) and length of treatment (18.5%) were not specified. In 24.7% of medications with commission errors, dosing frequency (19.9%) and incorrect strength/dose (2.2%) were the most common errors. Integration errors comprised 5.7% of all prescribing errors. No significant differences were observed between PBL and non-PBL graduates with regard to the total number of prescriptions with errors, drugs per prescription, polypharmacy, and the total number of drugs with errors. The proportion of prescriptions with a potential for drug-drug interactions was comparable between PBL and non-PBL graduates. PBL graduates prescribed medications using brand names at a rate greater than non-PBL, whereas non-PBL graduates prescribed medications on inappropriate "as required" basis, and injections at a rate greater than PBL residents. Conclusions: Prescription writing skill of the final year residents in an FPRP programme was suboptimal for both PBL and non-PBL graduates. Integration of prescription writing skill and a rational pharmacotherapeutic programme into the FPRP curriculum is recommended.


Abstract: Purpose: To evaluate antimicrobial prescribing pattern by primary care physicians. Methods: A nation-wide, retrospective, multi-centric prescription-audit was carried out in primary care health centres in Bahrain. Results: Systemic antimicrobials ranked the fourth most common class of drugs prescribed. Amoxycillin, cephalaxin, erythromycin, ciprofloxacin and cotrimoxazole were prescribed by general practitioners (GPs) more often than by family physicians (FPs) (p < 0.05). With respect to prescribing of other antimicrobials and anthelmintic mebendazole, the differences between GPs and FPs were nonsignificant. Seventy-seven per cent of systemic antimicrobials prescribed were for respiratory tract infections (RTIs). Topical antimicrobial preparations for ear and eye infections were prescribed by GPs in a rate significantly higher than by FPs (p < 0.05); of these, chloramphenicol and Locacorten viiform (flumethasone + clioquinol) ear drops and sulphacetamide eye drops were more often prescribed by GPs (p < 0.05). There were no significant differences in prescribing between GPs and FPs as regards topical antimicrobials used for oropharyngeal, skin and vulvovaginal infections. Conclusion: Antimicrobials were extensively used in primary care, mainly for treating RTIs. The general practitioners were more avid prescribers of antimicrobials compared to the FPs. Rational use of antimicrobials in primary care should be encouraged and the
reasons for the observed differences in prescribing of antimicrobials between the GPs and FPs need further evaluation.


Abstract: A nationwide, primary care-based prescription audit in infants to determine the prescribing pattern and prescribing errors of topical corticosteroid preparations in Bahrain. Prescriptions dispensed for infants were collected for two successive weeks from 20 primary-care health centres. Among 2282 out of 102,084 prescriptions (2.2%) dispensed for infants, 296 (13.0%) had corticosteroids for topical application to the skin, eye and ear. Plain corticosteroids comprised 6.7%, whereas corticosteroids with anti-infective accounted for 6.3% of topical corticosteroid preparations. Based on potency the proportions of corticosteroids prescribed were: mild (6.7%), moderately potent (2.6%) and potent (3.7%). The frequency of dosing and length of therapy were not stated in 21.6% and 43.6% of prescriptions, respectively. Base cream as a dilutonal vehicle was prescribed in 11.2% (11/98) and 32.4% (12/37) prescriptions containing hydrocortisone acetate 1% cream and betamethasone valerate 0.1%, respectively. In few instances two corticosteroids were concomitantly prescribed. Prescribing moderate-to-potent topical preparations in approximately half of the infants, co-prescription of multiple corticosteroid preparations, omission of important components of prescription, and resorting to the controversial vehicle diluting technique suggest that topical corticosteroid therapy is sub-optimal. In infants, topical corticosteroids should be rationally prescribed. Establishing the treatment guidelines, pharmacovigilance programme and revision of the primary care essential drug list are needed in Bahrain.


Abstract: The purpose of this study is to evaluate the drug utilization trends and to describe the prevalence and type of medication-related prescribing errors in infants treated at primary care health centers in Bahrain. Prescriptions issued for infants were collected over a 2-week period in May 2004 from 20 health centers. Prescribing errors were classified as omission (minor and major), commission (incorrect information) and integration errors. Medications were classified according to the British National Formulary. In infants with a mean age of 6.5 months (+/-3.1) drugs per prescription were 2.52 (+/-1.1). Paracetamol and sodium chloride nasal drops were the topmost prescribed systemic and topical drugs, respectively. In 2282 prescriptions, 2066 (90.5%) were with omission (major), commission, and integration errors. In 54.1% of prescriptions with omission errors, length of therapy was not specified in 27.7%, and in 12.8% the dosage form was not stated. In 43.5% of prescriptions with errors of commission, dosing frequency (20.8%) and dose/strength (17.7%)-related errors were most common. Errors of integration such as potential drug-drug interaction comprised 2.4% of all prescribing errors. The proportion of drugs prescribed irrationally were:
contraindicated medications, notably chlorpheniramine, promethazine, and corticosteroids (16.1%); medications prescribed on a p.r.n. basis (13.3%); missed information regarding strength of medications (2.8%); medications prescribed over extended periods (2.7%); low dosing frequency (2.6%); supratherapeutic doses (2.3%); excessive dosing frequency (0.8%). Irrational drug therapy in infants, with prescribing errors were apparent in primary care practice, which may be related to a lack of drug information, pharmacovigilance programme, and nonadherence to basic principles of prescribing. Establishing a national drug policy and pharmacovigilance programme for promoting rational drug use are to be considered. There is also a need to evaluate the effectiveness of interventions by measuring the outcomes.

Abstract: The association of vascular endothelial growth factor (VEGF) -583C/T variant with recurrent miscarriage (RSM) was investigated in 173 RSM cases and 248 control women. Increased minor allele and genotype frequencies of -583C/T, and reduced serum VEGF concentrations were associated with increased risk of RSM.

Abstract: Objective: To evaluate the association of interleukin-18 (IL-18) promoter single-nucleotide polymorphisms and changes in interleukin-18 serum levels underscores the involvement of interleukin-18 in recurrent spontaneous miscarriage (RSM). Design: ECase-control study. Setting: Outpatient obstetrics and gynecology clinics. Patient (s): Women with confirmed RSM (n=282), and 283 age- and ethnically matched controls. Intervention (s): None. Main Outcome Measure (s): IL-18 genotyping was accomplished by allelic discrimination assays; serum IL-18 levels were measured by ELISA. Results: The minor allele frequencies of rs360717 and rs1946519, but not rs360718 or rs187238, were higher in patients with RSM. Significant differences in the distribution of the rs360717 and rs1946519 genotypes were noted between patients and controls, and both rs360717 and rs1946519 IL-18 single-nucleotide polymorphisms showed significant association with RSM under additive, dominant, and recessive models. Lower serum IL-18 levels were seen between patients and controls and were more pronounced in rs360717 and rs1946519 heterozygous and homozygous genotypes. Four-locus (rs1946519/rs187238/rs360718/rs360717) IL-18 haplotype analysis identified that the AGAA (Pc<.001), CGAA (Pc<.001), and ACAG (Pc=.018) haplotypes were associated with a reduction in IL-18 secretion and with increased RSM risk, after adjustments for body mass index, menarche, and gravida. Conclusion (s): These results demonstrated that reduced IL-18 levels and rs360717 and rs1946519 IL-18 variants are significantly associated with RSM.

Abstract: Although epidemiological studies have persistently shown a high prevalence of diabetes in Arabs, the control of diabetes is still poor and complications of diabetes are common. We examined the prevalence of diabetic peripheral neuropathy (DN), neuropathic foot ulceration (FU) and peripheral vascular disease (PVD), and potential risk factors for these complications among patients attending primary care diabetes clinics in Bahrain. We studied 1477 diabetic patients (Type 2 diabetes 93%); to, including 635 men and 842 women, with ages ranging from 18-75 years in a cross-sectional study. The main predictor variables were demographic and clinical data, including assessment of foot and blood parameters. Mean age of the patients and duration of diabetes were 57.3 +/- 6.32 and 9.5 +/- 8.4 years, respectively. DN was present in 36.6% of the population, FU in 5.9%, and PVD in 11.8%. Diabetic patients with neuropathy were older than patients without neuropathy (P=0.001) and had had diabetes longer (P=0.002). Diabetic patients with foot ulcers had more severe neuropathy and higher vibration perception thresholds values than patients without foot ulcers (P<0.05). Older age, poor glycemic control, longer duration of diabetes, elevated cholesterol levels, current smoking, obesity defined by body mass index, large waist circumference, elevated triglycerides levels and hypertension but not gender, were significant risk factors for DN in both the univariate and the multivariate analyses (P<0.05). DN and PVD also remained significant risk factors for foot ulceration in the multiple logistic regression analysis.

Rates of DN and PVD are high among diabetic patients in Bahrain. Implementation of strategies for prevention, early detection, and appropriate treatment at the primary health care level are urgently needed.

Abstract: This study examined the association of depression, anxiety, and stress with Type 2 diabetes (T2DM) in Bahrain, an island-country with a very high prevalence of T2DM. This was a cross-sectional study involving administering Depression Anxiety Stress Scales (DASS)-21 structured depression, anxiety, and stress scale to 143 T2DM patients and 132 healthy controls. Higher proportion of T2DM patients were found in the mild-moderate and severe- extremely severe depression (p=0.002), anxiety (p<0.001), and stress (p<0.001) groups. Chronic disease and disease duration were significantly associated with the 3 disturbances, while employment status was associated with anxiety and depression. Logistic regression analysis showed that anxiety, depression, and stress were associated with T2DM after adjusting for all variables, while age was the only significant variable associated with stress. These results suggest a positive contribution of T2DM to increased depressive and/or anxiety and/or stress disorders among the patients examined, thereby recommending counseling for T2DM patients.

Alnasir FA, Jaradat AA. The effectiveness of AGU-MCAT in predicting medical student performance in year one of the College of Medicine of the Arabian Gulf University. Education for Health (Abingdon) 2011; 24(2): 447.

Abstract: To graduate good doctors, medical schools should adopt proper student procedures to select among applicant students. When selecting students, many medical colleges focus solely on their academic achievement on high school examinations, which do not reflect all, important attributes of student. For several years, the College of Medicine and Medical Sciences of the Arabian Gulf University has introduced and administered the AGU-MCAT (Arabian Gulf University Medical College Assessment Test) for screening student applicants. This study aimed to assess the ability of the AGU-MCAT to predict students' performance during their first year college study, as an example of one school's multi-dimensional admissions screening process. Methods: The AGU-MCAT is made up of three parts, including a written test on science, a test of students' English language skills and an interview. In the first part, students' science knowledge is tested with 100 multiple choice questions. The English exam assesses students. English reading and listening skills. Lastly, students are interviewed by two faculty members and one senior student to assess their personal qualities. The 138 students who passed the AGU-MCAT in September 2008 and matriculated in the school were studied. Their performance during Year One including their performance on exams in the various disciplines was compared to their achievement on the three AGU-MCAT components. Results: AGU-MCAT's total mark and its science component had the highest linear relationship to students' performance in the various disciplines in Year One, while the strongest predictor of students' performance at the end of Year One was the AGU-MCAT's science test (R²=45.5%). Students' grades in high school did not predict their achievement in year one. Conclustion: The AGU-MCAT used to screen applicants to the school also predicts students' performance during their first year of medical school.

Alnasir FA. Abu Baker Mohd Alrazi his input and achievements. The Journal of the Arabization Centre for Medical Sciences 2010; 30: 42-44.

Abstract: The Kingdom of Bahrain considers education one of the most important sectors of human development. The government secondary schools’ physical education program provides students with regular physical activities in order to develop positive attitudes towards physical activity as part of day-to-day living. There are few data related to physical education and activity in Bahrain. Objective of the study: This study was conducted to provide information on the attitudes of high school students towards the physical education program, in order to increase the role of schools in improving adolescent health, and prevent chronic diseases as early as possible. Methodology: This study was conducted in Bahrain government secondary schools, and 475 students (Bahraini and non-Bahraini of both genders were selected randomly from a total of 26 government high schools having a total population of 22,321 students. They were selected from the three main tracks for the academic year 2004-2005. Their ages ranged between 14-21 years.
Results: The study revealed that 68.5% of the students (both gender) had positive attitudes toward physical education, with a significant difference in attitude between male and female students. The main factors contributing to the students’ positive attitudes included: curriculum 76.0%, self-perception 70.9%, teacher 59.1%, class atmosphere 54.0% and facilities 36.0%. Conclusion: Negative attitudes towards physical education were more among female students than males due to lack of physical education facilities and inadequate classroom’s atmosphere. Recommendations: Physical education hours needed to be extended and physical education facilities to be enhanced by increasing the financial resources.


Abstract: Home delivery of various items and services directly to the home has mushroomed since the beginning of this century, including delivery of food, and other required services, such as laundry and personal things. The philosophy behind home delivery is to reduce the hassle of getting the service from its source, requiring effort, causing stress and costing money.


Abstract: Family medicine (FM) is a medical specialty that provides continuing and comprehensive health care for the individual and the family with a total health care responsibility from the first contact and initial assessment to the management of chronic problems. It includes prevention and early recognition of disease. Such services are provided by the Family Doctor (FD), a physician who is primarily responsible for providing primary, continuing, comprehensive, curative and preventive medical care in a personalized manner to patients and to their families, to all ages and both sexes, regardless of the presence of disease or the nature of the presenting complaint be it
biological, behavioral, or social. Since ancient times, doctors have been using the holistic approach while practicing medicine. Avicenna, Alrazi and several other Muslim doctors were implementing the concepts of family medicine while caring for their patients. However, with the disintegration of medicine into various specialties and sub-specialties, FM as a discipline started re-emerging at the beginning of the 20th century. In 1923, Francis Peabody commented that modern medicine had markedly fragmented health care delivery. He also stated “the essence of the practice of medicine is that it is an intensely personal matter. The treatment of a disease maybe entirely impersonal; the care of a patient must be completely personal”. Therefore, he called for the return of the generalist physician. In this presentation, we will highlight the importance of implementing family medicine in this region.


Abstract: تزخر الأدبيات العلمية والطبية الحديثة بالشروط الواجب توفرها في الطبيب الممارس الجيد، إلا أن الأدبيات القديمة والمؤرخات والأخطوات للأطباء المسلمين القدامى كانت غنية بتوصيف الصفات التي يجب أن يحتل بها الطبيب المخلص في أداء عمله، فلا يخلو أي مؤلف لأي طبيب قديم عن هذه القيم الواجب إتباعها منذ زمن أبوقرط وجالينوس إلى زمن الرازي وابن سينا والراهما وغيرهم.


Abstract: Background: At the College of Medicine and Medical Sciences of the Arabian Gulf University a new exam was implemented to examine year 6 students at the end of their family medicine clerkship rotation. It is called the watched objective structured clinical examination (WOSCE). The WOSCE was tried for four successive years since its development. Objective: To study the interater-reliability between the WOSCE’s examiners. Methods: The WOSCE consisted of 11 stations testing various areas of clinical competencies of year 6 students. It was implemented during the academic 2001-2002 and two faculty were responsible in correcting the students’ answer booklets. Results: 80 students were examined on 11 stations for a total 110 minutes. The mean station score given by 1st examiner was significantly higher than the mean station score given by 2nd examiner for most of the WOSCE stations. The mean total score of all stations for the 1st examiner was 97.13 ±SD 7.93 compared to 91.54 ± SD 10.00 for the 2nd examiner. This difference was statistically significant (P-Value = 0.00). Stations examined by the 1st examiner have coefficients of variation lower than that examined by the 2nd. Conclusion: The WOSCE is an effective exam that is able to test certain clinical skills. The WOSCE exam had a medium to high inter-rater reliability. There is a mild to high consistency between the two raters.


Abstract: لقد تطورت وارتقت المجالات التقنية والعلمية ذات العلاقة بالطب ومهنة التطبيب إبان فترة وجيزة من الزمان بخطوات واسعة عبر مراحل متتابعة وسريعة إلى الأمام، إذ استُحدثت الوسائل والأجهزة المُعَقَدة المُساعدة في التشخيص والعلاج. وعلى الوجه الآخر، تجاوزت تجاوزات المُعَقَدة المُساعدة في التشخيص والعلاج، وعلى الوجه الآخر، تجاوزت بينة الإنسان العديد من الأمراض والعلاجات المعقدة المتخصصة، وأخذ الإنسان على جُملة جوانب الوقاية والعلاج الطبي. وعلى الوجه الآخر، تجاوزت تجاوزات المُعَقَدة المُساعدة في التشخيص والعلاج، وعلى الوجه الآخر، تجاوزت بينة الإنسان العديد من الأمراض والعلاجات المعقدة المتخصصة، وأخذ الإنسان على جُملة جوانب الوقاية والعلاج الطبي. وعلى الوجه الآخر، تجاوزت تجاوزات المُعَقَدة المُساعدة في التشخيص والعلاج، وعلى الوجه الآخر، تجاوزت بينة الإنسان العديد من الأمراض والعلاجات المعقدة المتخصصة، وأخذ الإنسان على جُملة جوانب الوقاية والعلاج الطبي. وعلى الوجه الآخر، تجاوزت تجاوزات المُعَقَدة المُساعدة في التشخيص والعلاج، وعلى الوجه الآخر، تجاوزت بينة الإنسان العديد من الأمراض والعلاجات المعقدة المتخصصة، وأخذ الإنسان على جُملة جوانب الوقاية والعلاج الطبي. وعلى الوجه الآخر، تجاوزت تجاوزات المُعَقَدة المُساعدة في التشخيص والعلاج، وعلى الوجه الآخر، تجاوزت بينة الإنسان defects on the application of the treatment. However, there is a mild to high consistency between the two raters.
Abstract: Hypertension is one of the non-communicable diseases that are very

common world wide, especially in the developing countries. The non-communicable diseases are a group of illnesses that are not only preventable but have common preventable risk factors. The most important risk factors are smoking, drinking alcohol, high blood pressure [BP], high cholesterol, overweight, low fruit and vegetable intake and poor physical activity. Such diseases form the biggest challenge to the public health services in the Eastern Mediterranean Region, as they constitute 47% of the whole burden of disease, a figure expected to rise to 60% by the year 2020. The incidence of hypertension in the Eastern Mediterranean Region countries can reach up to 25% in the adult population, while its incidence in the American continent ranges from 14% to 40% among those 35 to 64. The prevalence of hypertension and obesity in this region, especially the Gulf Cooperation Council [GCC] countries, is increasing tremendously. Without a doubt the major causative factor for this increase is related to the rapid social changes in life style, attitude and eating habits. The high prevalence of hypertension in the GCC countries may also indicate low awareness rates among its people which studies have shown can reach up to 75%. It is a common practice to diagnose hypertension when BP is >140/90 and to classify it as mild, moderate or severe. However, since hypertension has serious consequences on various target organs, WHO recommended that it should be classified as follows:

• hypertension with no other cardiovascular risk factors and no target organ damage
• hypertension with other cardiovascular risk factors
• hypertension with evidence of target organ damage
• hypertension with other cardiovascular risk factors and evidence of target organ damage.

This review highlights the extent of the problem, its definition, the major risk factors and complications and effective methods of controlling and preventing hypertension.

Alnasir FA. The opium. The Journal of the Arabization Centre for Medical Sciences 2007; 11(2): 60-64.  
Abstract: Many of the ancient Muslim physicians have addressed the topic of opium, explaining its indications and contraindications. They have also described its appearance, taste, sources and mode of actions. Such information was written many years ago in the books of Avicenna, Alzehrawi, Ibn Albetar and Alantaki. Although they explained its medical advantages, they never forget to warn about opium’s addictive properties. In this respect, Dawood Alantaki indicated that "should its usage extends more than four days, there is a danger of addiction to the extent that sudden abstaining could lead to death". Altaberi also stated, "a few grams of it could lead to sleep and death". However, in the ninth century Alrazi was the first physician who used opium for anesthesia before surgeries. All historical indications show that the Muslim scientists were the first who used a mixture of analgesics and narcotics for patients before their operations. There are many similarities between modern and ancient medicine in the proper utilization of opium.

Available at:  
Abstract: We investigated the association of human leukocyte antigen (HLA) class II alleles and haplotypes with the pathogenesis of sickle cell anemia (SCA) osteomyelitis.
SCA patients comprised 42 patients with osteomyelitis and 150 patients without osteomyelitis; HLA-DRB1* and HLA-DQB1* genotyping was performed by polymerase chain reaction-sequence-specific priming (SSP). DRB1*100101 (P value corrected for the number of different alleles tested, P(c) = 0.003) was positively associated with osteomyelitis. At the haplotype level, DRB1*100101-DQB1*050101 (P(c) = 0.001) was more prevalent among patients, while DRB1*030101-DQB1*0201 (P(c) = 0.020) and DRB1*040101-DQB1*0302 (P(c) = 0.039) were more prevalent among SCA controls, thereby conferring disease susceptibility or protection to these haplotypes, respectively. These results show that specific HLA haplotypes influence SCA osteomyelitis risk and that specific HLA types may serve as markers for identifying SCA patients at high risk for osteomyelitis.


Abstract: Objective: To determine gender differences in the symptoms and age of onset of schizophrenia in Bahraini patients.

Methods: 112 Bahraini patients with schizophrenia who were initially involved in a genetic study were selected. The OPCRIT 3.31 checklist was applied as a diagnostic tool. OPCRIT items were analyzed for differences between males and females.

Results: No differences were found between males and females in the studied symptoms of schizophrenia and age of onset as “the earlier age at which medical advice was sought for psychiatric reasons or at which symptoms began to cause subjective distress or impair functioning”. This finding was found in both the familial and sporadic groups of schizophrenia. Furthermore, OPRIT was found to be an equally reliable tool in diagnosing schizophrenia in males and females.

Conclusion: The above finding were compared and contrasted to the findings of other studies. While there is agreement regarding the lack if gender difference in the age of onset of schizophrenia, there is no such consensus regarding the gender differences in the age of onset of schizophrenia. Caution should be taken with studies that make conclusions concerning this issue until a precise operational definition for the onset of the illness is derived.


Abstract: Background: Cancer is the second leading cause of death, following cardiovascular diseases, accounting for 12% of annually reported deaths in Bahrain. We determined the epidemiological patterns of malignancies in Bahrain and compared them with those of other Gulf Cooperation Council (GCC) countries and other developed countries. Subjects and Methods: Data for the study were obtained from the Bahrain Cancer Registry (BCR) database. The overall and type-specific 5-year average incidence rates were calculated for the years 1998-2002 and derived using the CANREG software formula. The incidence rates for the year 2000 were used for comparing Bahrain with those of other countries in the Arabian Gulf using the statistics of the Gulf Centre for Cancer Registration. Results: During the 5-year period there were
2405 cancer cases in Bahrain (1239 males and 1166 females), with an annual average of 481 cases. The world age-standardized incidence rates (ASR) were 162.3 and 145.2 per 100000 for Bahraini males and females, respectively. Generally, Bahraini men had a higher ASR for most cancer types, and the most common type of cancer was lung for males (35.2 per 100000), followed by bladder (14.5) and prostate (14.3), and breast for females (46.8), followed by lung (12.2) and ovary (7.7). Conclusion: Compared to other Gulf countries, Bahrain had higher incidence rates for cancers of the lung, prostate, colorectum, bladder, kidney, pancreas and leukemia among males and for cancers of the breast, lung, bladder, thyroid, uterus and ovary among females. A rising trend in cancer incidence is likely to continue for years or even decades to come.


Abstract: Background: Cancer is the second leading cause of death, following cardiovascular diseases, accounting for 12% of annually reported deaths in Bahrain. We determined the epidemiological patterns of malignancies in Bahrain and compared them with those of other Gulf Cooperation Council (GCC) countries and other developed countries. Subjects and Methods: Data for the study were obtained from the Bahrain Cancer Registry (BCR) database. The overall and type-specific 5-year average incidence rates were calculated for the years 1998-2002 and derived using the CANREG software formula. The incidence rates for the year 2000 were used for comparing Bahrain with those of other countries in the Arabian Gulf using the statistics of the Gulf Centre for Cancer Registration. Results: During the 5-year period there were 2405 cancer cases in Bahrain (1239 males and 1166 females), with an annual average of 481 cases. The world age-standardized incidence rates (ASR) were 162.3 and 145.2 per 100,000 for Bahraini males and females, respectively. Generally, Bahraini men had a higher ASR for most cancer types, and the most common type of cancer was lung for males (35.2 per 100,000), followed by bladder (14.5) and prostate (14.3), and breast for females (46.8), followed by lung (12.2) and ovary (7.7). Conclusion: Compared to other Gulf countries, Bahrain had higher incidence rates for cancers of the lung, prostate, colorectum, bladder, kidney, pancreas and leukemia among males and for cancers of the breast, lung, bladder, thyroid, uterus and ovary among females. A rising trend in cancer incidence is likely to continue for years or even decades to come.


Abstract: The association between putative virulence genes in Campylobacter jejuni clinical isolates, in vitro invasive capability and severity of infection is yet to be clearly described. We have characterized three virulence genes and correlated their presence with the severity of infection and in vitro invasiveness. We studied eight C. jejuni strains isolated from patients whose clinical data were scored to determine severity of infection. Cytotolethal distending toxin (cdtB), invasion associated marker (iam) and Campylobacter invasion antigen (ciaB) genes were detected by PCR and INT407 cells
used for invasion assays. Two strains positive for all three genes were the most invasive and isolated from patients with the most severe infection. Four strains positive for two genes and two strains negative for all the three genes were identified. The two cdtB(+ve)/ciaB(+ve) strains were more invasive than the cdtB(+ve)/iam(+ve) strains. One of the cdtB(-ve)/ciaB(-ve) strains showed invasion levels similar to cdtB(+ve)/ciaB(+ve) strains, but the second strain had a non-invasive phenotype. The findings indicate a correlation between in vitro invasive capability, and the presence of all three genes. The pattern of association between invasiveness and molecular characterization suggests that the ciaB gene confers a more invasive capability.

Abstract: Objectives: Vaso-occlusive crisis (VOC) is a significant cause of morbidity and mortality in sickle cell anemia (SCA) patients. Insofar as polymorphism in human platelet alloantigen (HPA) exhibit a prothrombotic nature, we hypothesized that specific HPA polymorphic variants are associated with VOC. We investigated the distribution of HPA1, HPA2, HPA3, HPA4, and HPA5 alleles genotypes among VOC and non-VOC control SCA patients. Patients/methods: This was a case-control study. Study subjects comprised SCA patients with (VOC group; n = 127) or without (Steady-state group; n = 130) VOC events. HPA genotyping was done by PCR-SSP. Results: Significantly higher frequencies of HPA-2b, HPA-3b, and HPA-5b alleles, and marked enrichment of HPA-3b/3b, HPA-5a/5b, and HPA-5b/5b genotypes, were seen in VOC than in control SCA patients. Taking homozygous wild-type genotypes as reference, univariate analysis identified HPA-3a/3b, HPA-3b/3b, and HPA-5b/5b to be associated with VOC. Multivariate analysis confirmed the independent association of only HPA-3a/3b and HPA-3b/3b genotypes with VOC. HPA-3 genotypes were significantly correlated with VOC frequency, type, and medication, and requirement for hospitalization. While both HPA 3a/3b (P = 0.002; OR = 2.94; 95% CI = 1.49-5.77) and 3b/3b (P = 0.006; OR = 3.16; 95% CI = 1.40-7.17) genotypes were associated with need for hospitalization, only HPA-3b/3b was associated with VOC frequency, type (localized vs. generalized), and medication (narcotics vs. NSAIDs). Conclusion: This confirms the association of HPA polymorphisms with SCA VOC, of which HPA-3 appears to be independent genetic risk factors for SCA VOC.

Available at: http://www.ncbi.nlm.nih.gov/pubmed/17160992?dopt=Citation
Abstract: Human platelet antigens (HPA) are implicated in the pathophysiology of certain hematological disorders, and as varied distribution of HPA-1 alleles and genotypes were reported for different countries and ethnic populations, we determined the distribution of HPA-1, -2, -3, -4, and -5 alleles, genotypes and haplotypes for 194 healthy Bahraini subjects by polymerase chain reaction with sequence specific primers. The distribution of the HPA polymorphisms was in Hardy-Weinberg equilibrium. Allele frequencies of 0.76 and 0.24 (HPA-1a and -1b), 0.77 and 0.23 (HPA-2a and -2b),

33
0.57 and 0.43 (HPA-3a and -3b), 0.93 and 0.07 (HPA-4a and -4b), and 0.86 and 0.13 (HPA-5a and -5b) were seen. With the exception of HPA-3a/a (30.4%), the frequencies of homozygous HPA-1a/a (56.8%), 2a/a (60.1%), 4a/a (87.2%), and 5a/a (75.7%) were higher than those of heterozygous (a/b) or homozygous (b/b) variants. Our results provide basic information for further studies of the HPA system polymorphism, which in turn will be instrumental in understanding and treating immune-mediated platelet disorders.


Abstract: Staphylococcus aureus, the main cause of nosocomial infection worldwide result in significant increases in mortality, morbidity, and cost related to prolong treatments. Silver compound has been in use since time immemorial for the treatment of burns, wounds and several other bacterial infections. In the present work, we explore the antibacterial activity of silver nanoparticles (Ag-NPs) dispersion (5-10 nm) against reference strain and clinical isolates of Methicillin-sensitive S. aureus (MSSA), and Methicillin-Resistant S. aureus (MRSA). The typical minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) against standard reference strain as well as, MSSA and MRSA were observed in the range of 12-48 μg/ml and 12-96 μg/ml, respectively. The MBC/MIC ratios against all strains were found in the range of ≤1 to ≤4, which shows that Ag-NPs inhibit bacterial growth in a bactericidal rather than a bacteriostatic manner. Our finding suggests that Ag-NPs are effective broad-spectrum antibacterial agents regardless of their drug-resistance mechanisms.


Available at: http://www.bahrainmedicalbulletin.com/previousisues.htm

Abstract: Objective: To evaluate the use of electronic communication and entertainment devices by the Arabian Gulf University (AGU) medical students. Setting: Arabian Gulf University, Kingdom of Bahrain. Design: Cross sectional study. Method: Years 1 to 4 medical students who were enrolled in the 2008-2009 academic year were included in the study. A self-administered anonymous questionnaire was used, which included enquiries on personal characteristics and the use of electronic communication and entertainment devices. Result: Four hundred forty-three students responded. The study showed different habits according to gender and accommodation. Hundred and thirty (42%) female students used their mobile phones for more than 2 hours per day compared to 95 (31.3%) watched television (TV)/DVD and 203 (66.1%) used computers. The corresponding numbers and percentages for male students were 30 (24%), 49 (39.2%) and 79 (63.2%) respectively. Conclusion: The AGU medical students do not appear to adopt healthy habits for using electronic communication and entertainment devices. Moreover, these habits are seen among students based on gender and accommodation. Urgent interventions are needed at AGU on promoting the appropriate use of the devices among medical students.

Available at: http://www.schweizerbart.de/papers/anthranz/detail/66/73788/Overweight_and_Obesity_among_Adolescents_in_Bahrain

Abstract: A cross-sectional study was conducted to assess the prevalence of overweight and obesity amongst adolescents in Bahrain. The subjects consisted of grades 1 - 3 secondary school students (336 males and 396 females) between the ages 15 - 18 years, selected using a multi-stage stratified random sampling technique from government schools from all the governorates of Bahrain, representing about 3% of the target population. The mean height in males and females ranged between 162.9 - 171.3 cm and 157.4 - 159.9 cm, respectively, while the mean weight ranged between 59 - 72 kg and 59 - 66 kg, respectively. The proportion of those underweight was higher in males (8.6%) compared to that in females (2.3%). The highest proportion of normal weight was observed at the age of 15 years in both the male and female adolescents (66.0%). The prevalence of overweight and obesity was higher in female (17.4% and 19.4%) compared to the male (15.8% and 13.7%) adolescents. Although compared to previous reports, a decline in the body mass index (BMI) was observed for both the genders in Bahrain. We believe that the launch of intervention programs at a national level to educate school authorities, parents and concerned health professionals alike, is urgently required.


Abstract: Objective: To characterize the disease causing mutation in a large consanguineous Pakistani family with severe Mal de Meleda (MDM) or keratosis palmoplantaris transgrediens, a rare autosomal recessive skin disorder. Methodology: Single nucleotide polymorphism (SNPs) genotyping was performed using the GeneChip Mapping 250K array (Affymetrix). Homozygosity mapping and sorting of genomic regions were performed with dedicated software called AutoSNPa. Selected regions were further investigated by genotyping with microsatellite markers derived from known and novel polymorphic repeats. Two-point LOD score calculation was performed by using the MLINK of Fastlink computer package. All three coding exons of ARS (component B) gene were amplified by PCR and sequenced. Conclusion: Sequencing of all the coding exons of ARS (component B) gene in the affected individuals revealed a recurrent missense mutation in exon 3 at base pair 256 from Guanine to Alanine (256G > A) and as a result the amino acid Glycine is replaced by Arginine at position 86 (G86R). This finding will facilitate control of affected MDM births in the Pakistani families.


Abstract: This study relates to a novel mediator signaling between the nervous system and the spleen following an immune challenge. Using enzyme-linked immunospot and
cell proliferation assays, we found that supernatants of cultured splenocytes prepared from subcutaneously trypanosome-inoculated rats and mice spleens obtained immediately after inoculation and added to naive cells significantly stimulate interferon-gamma production and cell proliferation compared to phosphate-buffered saline-inoculated animals. This action was abrogated by surgical denervation of the spleen. Using the fluorescent differential display technology, the gene involved in this process was identified and further cloned and its sequence was mapped to chromosome 14 (GenBank accession number: EU552928). Protein expression revealed approximately 15 kDa molecule with biological activities similar to the cultured supernatants of splenocytes obtained directly from parasite-inoculated animals. Antibodies raised against the protein blocked the activities of both the protein and the supernatant and also recognized a band in the active supernatant with the same molecular mass as the protein. Furthermore, the protein was able to reactivate experimentally immunosuppressed cells by regaining their ability to proliferate, suggesting that such a nervous system-induced immune system-released activating agent (ISRAA) may have a potential therapeutic benefit in immunocompromised situations and in further understanding the mechanism for innate immunity commencement and action.


Abstract: Background: Primary health care is an important source for referrals of patients with mental health problems to the psychiatric hospital in Bahrain.

Methodology: This is a descriptive cross-sectional study conducted in the psychiatric hospital of Bahrain using all referrals by primary health care physicians to the hospital during one-year period January to December 2006. Results: A total of 215 referral forms were screened and the information was collected using a structured data form. The sample consisted of 81.1% children and adolescents. Depression was the most common psychiatric disorders among children and adolescents as diagnosed by the primary care physicians were Attention Deficient Disorder (23%) and Nocturnal enuresis (15%). About 6% of cases were given antipsychotics in the primary health care. 95% of cases were followed up as outpatients in the psychiatric hospital. The overall agreement in origina diagnosis made by the primary care physicians to the psychiatrist's final diagnosis for all referred cases was 47%. Conclusion: The most common psychiatric disorders among the referred patients from primary health care centers were Depression and Anxiety. The study revealed that the primary care physician diagnosis was concordant with the psychiatrists diagnoses in 47% which is considered low, but is consistent with findings in other studies.


Abstract: In this study, 12 Y-STR loci (DYS391, DYS389I, DYS439, DYS389II, DYS438, DYS437, DYS19, DYS392, DYS393, DYS390, and DYS385a/b) included in the PowerPlex® Y system were genotyped in individuals from three ethnically isolated populations (Sinteu, Tileagd and Palota) of Bihor county and compared to a control population from the general population of the same county in North-Western Romania.
Allele frequency distributions, gene diversity, haplotype diversity and discrimination capacity was estimated. Y chromosome haplogroups were predicted. The presumed origins of individuals from the Sinteu, Tileagd and Palota isolates are territories of Slovakia, the Indian subcontinent (Romani people) and Germany, respectively. The furthest apart genetically is the Tileagd isolate.


Abstract: The objective of the study was to investigate the association of interleukin (IL)-10 promoter microsatellite polymorphisms, linked with altered IL-10 secretion, with the susceptibility to acute coronary syndrome (ACS) in adult Tunisian patients. We genotyped 291 ACS patients and 291 age-, gender- and ethnically matched control subjects for the microsatellites IL-10R [X78437.2g.5325CA(11_15)] and IL-10G [X78437.2g.8134CA(14_29)] by PCR-based assays. Haplotypes were reconstructed using maximum likelihood method. Regression analysis was used in determining the risk imparted by specific IL-10 genotypes and haplotypes. A significant decrease in IL-10G12 (24 CA repeats) (P<0.001; OR=0.465) and IL-10G15 (27 CA repeats) (P=0.043; OR=0.232), and a significant increase in the low IL-10 producer allele, IL-10R3 (14 CA repeats) (P=0.049; OR=1.461), microsatellites were seen in the ACS group compared with controls. Of the possible 14 haplotypes constructed, there was an enrichment of the R2G9 (13CA vs. 21CA) haplotype in controls [P=0.019; adjusted OR (95% CI)=0.67 (0.48-0.94)] and R2G15 (13CA vs. 27CA) haplotype in cases [P=0.042; adjusted OR (95% CI)=5.29 (1.06-26.30)], thus assigning a protective and susceptible nature to these haplotypes respectively. The differential association of IL-10 microsatellite alleles and haplotypes with ACS suggests that IL-10 contributes to ACS pathogenesis. While the functional attributes of these microsatellite markers remain to be seen, it is likely that they have distinct functional properties (altered IL-10 secretion), which in turn affect the susceptibility to ACS development.


Abstract: In addition to its established immuno-regulating capacity, the anti-inflammatory cytokine interleukin (IL)-10 exerts direct effects on coagulation. IL-10 down regulates the expression of tissue factor (TF) and thrombin generation (TG). Thus, we hypothesised that IL-10 could enhance the effect of anticoagulants. To evaluate in vitro the potential additive effect of IL-10 on fondaparinux-induced anticoagulation. Human monocytes were purified by elutriation, and were activated by factor Xa (FXa). Real-time RT-PCR and Western blotting were used to evaluate FXa-induced TF synthesis. TG test was used as a functional test to assess TF-dependent monocyte procoagulation, and to evaluate the effects of IL-10 (200 and 500 pg/ml) and fondaparinux (0.0, 0.1, 0.4, 0.7 and 1.2 μg/ml), separately and in combination. We
confirmed that FXa induced TF mRNA and protein synthesis by monocyte in a concentration dependent manner. We showed that FXa-activated monocytes triggered TG via TF expression. We reported that IL-10 inhibited TG with a marginal effect seen at 200 pg/ml. Results with fondaparinux showed a concentration-dependent TG inhibition. The combination of IL-10 and fondaparinux effects demonstrated that IL-10: (i) potentiates the inhibitory effect of fondaparinux on TG by 10-30%, and (ii) dramatically modifies fondaparinux IC50 for each TG parameter. IL-10 enhances in vitro the extent of anticoagulation induced by fondaparinux.


Abstract: Anticoagulants, including unfractionated heparin (UFH), enoxaparin and fondaparinux, are approved drugs in acute coronary syndrome (ACS). Monocytes and monocyte-derived microparticles (MMPs) play an important procoagulant role in ACS by expressing high tissue factor (TF) levels, which in turn triggers thrombin generation. The objective of our study is to compare the in-vitro inhibitory effect of UFH, enoxaparin and fondaparinux in monocytes and MMP models. Human-elutriated monocytes were activated for 5 and 18 h by lipopolysaccharide to obtain activated monocytes (ac-M) or MMPs, respectively. Thrombin generation inhibition was assessed using ac-M or MMPs mixed with platelet-poor plasma containing increased concentrations of anticoagulants. Thrombin generation inhibition was dose-dependent with a differential effect according to the drug: the highest for UFH, the lowest for fondaparinux. Rate index was the most sensitive parameter. For fondaparinux, its IC50 values (anti-Xa IU/ml) were 0.59±0.05 for ac-M and 0.17±0.03 for MMPs. For enoxaparin, rate index IC50 values were 0.27±0.03 for ac-M and 0.19±0.02 for MMPs. Our data support the notion that cell-induced thrombin generation assay may be a reliable alternative to anti-Xa assessment in determining patient anticoagulation level.


Abstract: Objectives: The contribution of interleukin (IL)-10 promoter variants -1082G/A, -819C/T, and -592C/A to the risk of coronary artery disease (CAD) was investigated in 291 CAD patients and 291 age- and gender-matched control subjects. Methods: and results IL-10 genotyping was performed using PCR-allele-specific amplification (PCR-ASA). Regression analysis was employed in assessing the contribution of the IL-10 variants to the overall CAD risk. A higher frequency of the -592A allele (p=0.004), but not the -1082A (p=0.828) or -819T (p= 0.952) alleles, was seen in CAD patients. A higher frequency of -592C/A (p \(\leq\) 0.011), and a lower frequency of -592C/C (p \(\leq\) 0.015) genotypes was noted in patients compared to healthy controls. Regression analysis demonstrated an association of -592C/A [OR (95% CI)]=1.82 (1.02-3.23)] and -592A/A [OR (95% CI) \(\leq\)3.33 (1.27-9.09)] genotypes with 1-artery disease. Haplotype analysis revealed that none of the eight possible IL-10 haplotypes was associated with CAD or with the severity of CAD, and was confirmed by multivariate regression analysis, after adjusting for a number of confounders (smoking, systolic and diastolic blood pressure, hypertension, diabetes, glucose, cholesterol, and
triglycerides). Conclusions: Our results suggest that the -592C/A, more so than the -1082G/A or the -819C/T IL-10 promoter variant alleles, may be considered to be a risk factor for CAD in Tunisians.


Abstract: In addition to HLA and insulin genes, the costimulatory molecule CTLA-4 gene is confirmed Type 1 diabetes (T1D) susceptibility gene. Previous studies investigated the association of CTLA-4 genetic variants with the risk of T1D, but with inconclusive findings. Here, we tested the contributions of common CTLA-4 gene variants to T1D susceptibility in Tunisian patients and control subjects. The study subjects comprised 228 T1D patients (47.8% females) and 193 unrelated healthy controls (45.6% females). Genotyping for CTLA-4 CT60A/G (rs3087243), +49A/G (rs231775), and -318C/T (rs5742909) was performed by PCR-restriction fragment length polymorphism (RFLP) analysis. The minor-allele frequencies (MAF) for the three CTLA-4 variants were significantly higher in T1D patients, and significantly higher frequencies of homozygous +49G/G and homozygous CT60G/G genotypes were seen in patients, which was confirmed by univariate regression analysis (taking the homozygous wild type as a reference). Of the eight possible three-locus CTLA-4 haplotypes (+49A/G, -318C/T, and CT60A/G) identified, multivariate regression analysis confirmed the positive association of ACG (odds ratio [OR], 1.93; 95% confidence interval [CI], 1.26 to 2.94), GCG (OR, 2.40; 95% CI, 1.11 to 5.21), and GTA (OR, 4.67; 95% CI, 1.52 to 14.39) haplotypes with T1D, after confounding variables were adjusted for. Our results indicate that CTLA-4 gene variants are associated with increased T1D susceptibility in Tunisian patients, further supporting a central role for altered T-cell costimulation in T1D pathogenesis.


Abstract: Objective: To determine the molecular epidemiology of extended-spectrum β-lactamase (ESBL) by testing a cohort of clinical ESBL-producing bacterial isolates that were isolated in the Kingdom of Bahrain. Methods: ESBL producing Enterobacteriaceae isolates (based on phenotypic tests) were collected from Microbiology Laboratory of the Salmaniya Medical Complex, Bahrain between January-June 2006. Antibiotic susceptibility to a panel of antibiotics was performed and bla (CTX-M) genes were detected by multiplex PCR. Results: A total of 230 isolates (Escherichia coli, n=180; Klebsiella pneumoniae, n=50) were studied, 98% were CTX-M type. For Escherichia coli isolates, 65 (36.1%) harbored CTXM+TEM combination and 68 (37.8%) had CTX-M alone. In contrast, for Klebsiella pneumoniae isolates only 5 (10.0%) harbored the CTX-M combination, and none had CTX-M only. The bla (CTX-M) gene was found predominantly in urine isolates (n=145/230; 63.0%). Sensitivity to imipenem and nitrofurantoin was 100% and 60%, respectively. CTX-M carriage was associated with the resistance to fluoroquinolones, trimethoprim-sulfamethoxazole and aminoglycosides. Conclusions: Our study documentes high prevalence of CTX-M ESBL type among Escherichia coli and Klebsiella from the Kingdom of Bahrain. The apparent
dissemination of CTX-M producers could represent a substantial barrier in the treatment of community-acquired infections. The use of extended-spectrum cephalosporins, quinolones, and aminoglycosides is compromised, leaving carbapenems as the therapeutic option for severe infections caused by ESBL producers.


Abstract: Objective: To determine the molecular characterization of extended-spectrum beta-lactamases (ESBL) isolates from a tertiary center in Saudi Arabia using multiplex polymerase chain reaction (PCR) technique and assess their antibiotic susceptibility pattern. Methods: Prospective study conducted at the Saudi Aramco Dhahran Health Center, Dhahran, Saudi Arabia between April-December 2006. Extended-spectrum beta-lactamases phenotype of isolates identified by automated methods was confirmed using E-test. Multiplex PCR for the detection of blaTEM, blaSHV and blaCTX-M was performed. Susceptibility to a panel of antibiotics was determined. Results: One hundred isolates (Escherichia coli [E.coli] n=84; Klebsiella pneumoniae [K. pneumoniae] n=16) were studied and 71% harbored the blaCTX-M gene. For E.coli isolates 43 (51%) harbored CTX-M+TEM combination and 21 (25%) had CTX-M alone. In contrast, only one K. pneumoniae isolate (6.2%) harbored the CTX-M+TEM combination and 3 (18.8%) isolates had CTX-M only. One E.coli and 7 K. pneumoniae isolates were blaSHV positive. The blaCTX-M gene was found predominantly in urinary isolates (n=63/71; 88.7%). The presence of blaCTX-M was significantly higher in isolates from outpatients compared to inpatient (p<0.05). Sensitivity to imipenem was 100% and 78% to nitrofurantoin. Resistance to amoxicillin-sulbactam was significantly higher in blaCTX-M positive isolates (p<0.05). Conclusion: The findings indicate a high-level of blaCTX-M positive ESBL isolates circulating in our setting with the dissemination of these in the community. The trend of multidrug resistance profile associated with carriage of blaCTX-M gene is cause for concern.


Abstract: Background: Infection in neonatal intensive care unit (NICUs) causes significant morbidity and mortality worldwide. The microbial profile and antibiotic sensitivity are important contributing factors. Objective: The aim of this study is to investigate the incidence of various invasive pathogens in an NICU and to describe the antibiotic resistance patterns in Gram-negative rods isolated from NICU. Methods: Data from the microbiology laboratory at Salmaniya Medical Complex from January 2002 till December 2007 were reviewed pertaining to organisms isolated, type of samples, and antibiotic resistance pattern of Gram-negative rods (GNRs). Data were grouped into Group 1 (2002-2004) data and Group 2 (2005-2007) data. Results: There was no significant difference between the two groups with regard to percentage of positive culture 17.3% Group 1 and 18.6% Group 2. There was a significant increase of multidrug resistant (MDR), Acinetobacter beurmanni and extended spectrum beta lactamase (ESBL) producing organisms. Resistance to third and fourth generation cephalosporins was alarmingly high. Discussion and conclusion: Our study documented increase of resistant organisms and high resistance to cephalosporin. The use of ampicillin and
gentamycin as empirical therapy should be reviewed. Further surveillance studies are needed to monitor both organisms and antibiotic resistance.


Available at:

**Abstract:** Background: The vacuolating cytotoxin and the cytotoxin-associated protein, encoded by vacA and cagA, respectively, are important virulence determinants of Helicobacter pylori. Objective: The aim of this study was to perform vacA genotyping and evaluate its association with cagA genotype and clinical outcome. Methods: One hundred and twenty H. pylori strains were isolated from dyspeptic patients (29 with peptic ulcer, 91 with non-ulcer dyspepsia). Genotype was determined by PCR. Results: Seventy-nine (66%) of 120 strains had the vacA signal sequence genotype s1 and 41 (34%) had the type s2. The vacA middle-region types m1 and m2 were detected in 56 (47%) and 64 (53%) strains, respectively. The combinations s1-m1 (n=56 [47%] and s2-m2 (41 [34%]) occurred more frequently than s1-m2 (23 [19.2%]; p=0.001). No strain with the combination s2-m1 was found. All patients with peptic ulcers harbored type s1 strains compared to 75 (82.4%) of 91 patients with non-ulcer dyspepsia (p=0.01). The vacA genotype s1 was associated with the presence of cagA (p <0.0001). The cagA gene was detectable in 38 (31.6%) of 120 isolates and present in all 29 patients with ulcer compared to nine of 91 with non-ulcer dyspepsia (p <0.001). Conclusion: Helicobacter pylori strains of vacA type s1 and the combination of s1-m1 were associated with peptic ulceration and the presence of cagA gene.


Available at:

**Abstract:** Activated protein C resistance (APCR) is a significant risk factor for venous thromboembolism (VTE), with the factor V (FV) G1691A (Leiden) mutation accounting for the majority of inherited APCR cases. An additional FV polymorphism, A4074G (FV-HR2), reportedly increased VTE risk by some, but not all groups. We determined the prevalence of FV-Leiden and FV-HR2 SNPs in 126 patients with deep venous thrombosis (DVT), and 197 control subjects. Frequencies of FV-Leiden A and HR2 G alleles, together with FV-Leiden G/A and A/A (but not HR2 A/G) genotypes were significantly higher among patients. While no significant linkage disequilibrium was noted between FV 1691A and 4070G or A alleles, significantly higher prevalence of single-mutant 1691G/4070G and 1691A/4070A haplotypes were seen in patients. FV Leiden and FV HR2 haplotype are independent risk factors for DVT, and their coinheritance does not seem to increase significantly DVT risk imparted by either.

Abstract: Plays of William Shakespeare reflect a very rich collection of medical terms as well as brief to detailed descriptions of clinical features of various medical conditions. This study presents a comprehensive inventory of passages from Shakespearean plays that depict critical description of symptoms, signs, and pathophysiology in a limited sense in relation to various neurological conditions listed in alphabetical order. Most passages do not reflect comments on conditions of actual patients, but deal with expressions, drawn from clinical relevance in medicine during the Shakespearean era, and used figuratively by the bard to illustrate ideas of the speakers in the plays. The quoted passages appended with brief explanations, attempt to demonstrate the fact that many of the clinical features described in relation to present day neurological disorders were known at the time, critically analysed and incorporated by Shakespeare into his plays most appropriately.

(D)


Abstract: Background: In developing countries, gender-based treatment disparities in cardiovascular preventive therapy have received little attention. Aims: To evaluate the gender-based differences in cardiovascular disease risk profile, drug prescribing pattern, and blood pressure (BP) and glycemic control rates in diabetic hypertensives treated at primary care setting in Bahrain. Settings and Design: A retrospective study at primary care setting. Materials and Methods: An audit of the medical records of 392 diabetic hypertensives (127 men, 265 women). Results: BP and glycemic targets were achieved in < 10% and < 13% of diabetic hypertensives, respectively. Angiotensin converting enzyme inhibitors monotherapy was more often prescribed in males. Apart from this, no significant differences in prescribing pattern were observed between male and female diabetic hypertensives treated with either antihypertensive mono or multidrug therapies. With the exception of insulin which was more often prescribed to females, a similar prescribing pattern and rank order of antidiabetics, either as monotherapy or combinations, was observed in both genders. The majority of diabetic hypertensives were at high cardiovascular risk. The body mass index and total cholesterol level were greater in females. Prescribing lipid-lowering drugs and aspirin were suboptimal; aspirin was more often prescribed to males. There was no gender-based difference with regard to the use of lipid-lowering drugs. Conclusions: BP and glycemic controls were suboptimal in both male and female diabetic hypertensives treated by primary care physicians. Cardiovascular disease preventive strategies have received little attention regardless of gender or other risk factors. Gender-based treatment inequities also need to be addressed.


Abstract: Rationale, aims and objectives: To evaluate the variation in prescribing by primary care doctors during the morning and the evening clinics and to determine whether these prescribing patterns are influenced by doctors' training. Background: A retrospective prescription-based study was carried out in 17 out of 20 primary care health centres in Bahrain distributed across the Kingdom. Results: A total of 4472 prescriptions containing 10,588 drug-items covering the prescribing practice of approximately 90% primary care doctors were analysed. Paracetamol was the most commonly prescribed drug in both clinics. Drugs such as diclofenac sodium, amoxycillin, ibuprofen, chlorpheniramine, hyoscine butylbromide, Actifed, Benylin and xylometazoline were the most commonly prescribed drugs to patients attending morning and evening clinics with a considerable variation in ordinal ranking of proportions. As regards morning clinic, chlorpheniramine and Fefol were prescribed by the family doctors (FDs) more often than by the general practitioners (GPs) (P<0.05), whereas, multivitamins were prescribed by the GPs more often than by the FDs (P=0.001). During the evening clinic, however, ibuprofen, chlorpheniramine, bromhexine and xylometazoline were prescribed by the FDs in a rate significantly higher than that prescribed by the GPs (P<0.05). The prevalence of acute and/or chronic morbidities in patient attending clinics was estimated based on the therapeutic indication for drugs used. The mean number of drugs per prescription was 2.41+/-1.3. Prescriptions containing three or more drugs comprised 41.7% of all prescriptions. The GPs had a greater tendency to practice polypharmacy than the FDs. Conclusion: A significant diurnal variation in prescribing, and polypharmacy practice were related to the training Background of the doctors. This quantitative study provides the baseline data for monitoring primary care prescribing practices in Bahrain. To further evaluate the underlying factors that influence drug use indicators, a qualitative study is needed.


Abstract: Background: Student's perceptions of pre-clerkship phase concerning their experience of the Problem-Based Learning (PBL) curriculum are variable. Objective: To determine how students in the pre-clerkship phase perceive problem-based learning and the changes in these perceptions with increasing experience. Setting: College of Medicine and Medical Sciences, Arabian Gulf University, Bahrain. Method: Students were interviewed in focus groups and responses were used to develop a structured questionnaire, with 25 sets of questions on five components of the PBL process, which was distributed to 148 students. Response rates were 96%, 76% and 46% for years 2, 3 and 4, respectively. Result: Students perceived PBL as interesting and it develops self-confidence. During tutorials, most of the students were willing to challenge each other but not the tutor. Students preferred discussions with peers to consulting seniors. As the seniority increase, students tended to discuss more during the second tutorial and tended to ask more questions. While preparing for end-of-unit examinations students attempted inter-problem integration less than intra-problem integration. Conclusion: Students perceived PBL as an interesting, though difficult, method of learning, which helps to develop their self-confidence but may result in gaps in their knowledge. The tendency to focus on clinical aspects of a given problem at the expense of its basic science concepts should be discouraged by careful construction of the problems and tutor guides. While
students challenge their peers during discussion, all students do not prepare adequately for the second tutorial. Integrated learning can be further enhanced through focusing on the themes identified in the unit booklets and the use of integrated questions on these themes.


Abstract: The incidence and ossification of sesamoid bones in the hands and feet were studied in 922 radiographs (400 hands and 522 feet) in an Arab population from Bahrain, 5-83 years of age and consisting of 549 adults (393 men and 156 women) and 373 children (286 boys and 97 girls). All radiographs of the hand and foot in the adult population showed two sesamoid bones in the thumb metacarpophalangeal (MCP) joint and in the hallucal metatarsophalangeal (MTP) joint, respectively. Only 2.3% and 1.5% of hands showed sesamoids at the MCP joints of the middle and ring fingers respectively compared to a reported incidence of 7.1% for each digit in Caucasians. The incidence of sesamoids in the MTP joints of third and fourth toes (0.6% each) and inferior to the hallucal interphalangeal joint (3.1%) is probably the lowest reported so far in the literature. In the hands, ossification commenced first in the thumb sesamoids, at the age of 10 years in females and 11 years in males and was completed by the age of 13 and 14 years, respectively. In the feet, ossification began first in the hallucal sesamoids at the age of 8 years in females and 9 years in males and was completed by the age of 10 years in both sexes. The incidence and ossification of sesamoids in the hands and feet in the Arab population from Bahrain seem to differ considerably from reports in other populations. The clinical significance of our findings is discussed.


Abstract: Objective: To study the glycaemic profile of patients with severe malaria (SM). Methods: For this purpose, 110 SM patients were recruited. Pre-treatment random blood glucose and plasma insulin were measured in a subset of donors. An ex-vivo experiment was developed for estimation of glucose consumption by parasitized erythrocytes. Results: Hyperglycaemia was frequent in SM but more commonly associated with cerebral malaria (CM), while hyperinsulinaemia was recognized in severe-malarial-hypotension (median, 25 %-75 %, 188.2, 93.8-336.8 pmol/L). The plasma insulin level was positively correlated with age (CC = 0.457, p < 0.001) and negatively with parasitaemia (CC = -0.368, p = 0.045). Importantly, fatal-CM was associated with hyperglycaemia (12.22, 6.5-14.6 mmol/L), hyperinsulinaemia (141.0, 54.0-186.8 pmol/L) and elevated homeostasis model assessment (HOMA) values. However, there was a trend of higher glucose consumption by parasites in CM compared with that in uncomplicated malaria (UM). Conclusion: Hyperglycaemia, hyperinsulinaemia and elevated HOMA are evidence for insulin resistance and
possibly pancreatic B-cell dysfunction in fatal-CM.


Available at: http://www.ncbi.nlm.nih.gov/pubmed/?term=Common+polymorphisms+of+calpain-10+and+the+risk+of+type+2+diabetes+in+a+Tunisian+Arab+population%3A+a+case-control+study.

Abstract: Background: Genetic variations in the calpain-10 gene (CAPN10), in particular the at-risk diplotype (112/121), were previously implicated with increased risk of type 2 diabetes (T2D). Methods: We examined the association of CAPN10 UCSNP-43 (rs3792267), UCSNP-19 (rs3842570), and UCSNP-63 (rs5030952) SNPs with T2D in 917 Tunisian T2D patients and 748 non-diabetic controls. CAPN10 genotyping was done by PCR-RFLP. Results: Enrichment of UCSNP-19 2R (minor) allele and 2R/2R genotype was found in T2D patients; the allele and genotype distribution of UCSNP-43 and UCSNP-63 alleles and genotypes were not significantly different between patient groups and non-diabetic control subjects. Regression analysis demonstrated progressive increases in T2D risk in 3R/2R [OR (95% CI) = 1.35 (1.08 - 1.68)] and 2R/2R [OR (95% CI) = 1.61 (1.20 - 2.18)] genotypes. Of the six haplotypes detected, enrichment of haplotype 111 (UCSNP-43/UCSNP-19/UCSNP-63) was seen in patients (Pc = 0.034); the distribution of the other haplotypes was comparable between patients and control subjects; neither haplotype 211 nor haplotype 212 was observed. Furthermore, the frequency of all CAPN10 diplotypes identified, including the "high-risk diplotype (112/121) reported for Mexican-Americans and Northern Europeans, were comparable between patients and controls. Conclusions: CAPN10 UCSNP-19 variant, and the 111 haplotype contribute to the risk of T2D in Tunisian subjects; no significant associations between CAPN10 diplotypes and T2D were demonstrated for Tunisians.

Ezzidi I, Mtiraoui N, Nemr R, Kacem M, Al-Khateeb GM, Mahjoub T, Almawi WY. Variants within the calpain-10 gene and relationships with type 2 diabetes (T2DM) and T2DM related traits among Tunisian arabs. Diabetes Metab 2010; 36(5): 357-362.

Available at: http://www.ncbi.nlm.nih.gov/pubmed/20570542

Abstract: Background: Common variations in the calpain 10 (CAPN10) gene variants UCSNP-43, UCSNP-19 and UCSNP-63, and the 112/121 diplotype, are associated with an increased risk of type 2 diabetes (T2DM) and T2DM-related traits. Methods: The association of UCSNP-43, -19 and -63 CAPN10 SNPs with T2DM was assessed in 917 Tunisian T2DM patients and 748 ethnically matched non-diabetic controls. CAPN10 genotyping was done by PCR-RFLP. Results: Significant differences in UCSNP-19 MAF, but not UCSNP-43 or -63, and genotype distribution were seen between patients and controls. Heterogeneity in UCSNP-19, but not UCSNP-43 and -63, genotype distribution was noted according to geographical origin. Obesity was associated with UCSNP-19, while raised fasting glucose was associated with UCSNP-63, and increased HDL was associated with UCSNP-43. Enrichment of homozygous UCSNP-19 2/2 was seen in overweight and obese compared with lean patients; logistic-regression analyses demonstrated a positive association of the 2/2 genotype with overweight [P=0.003; OR (95% CI)=2.07 (1.28-3.33)] and obese [P=0.021; OR (95% CI)=1.83 (1.10-3.07)] patients. Of the six CAPN10 haplotypes identified,
significant enrichment of only haplotype 111 was seen in T2DM patients \([Pc=0.034;\ OR \ (95\% \ CI)=1.22 \ (1.06-1.41)]\), while the frequency of all identified CAPN10 diplotypes, including the high-risk 112/121, was comparable between patients and controls. Conclusion: While CAPN10 UCSNP-19 SNP and haplotype 111 contribute to the risk of T2DM in Tunisian subjects, no significant association between CAPN10 diplotypes and T2DM was demonstrated.


Available at: http://www.ncbi.nlm.nih.gov/pubmed/?term=Identification+of+specific+angiotensin-converting+enzyme+variants+and+haplotypes+that+confer+risk+and+protection+against+type+2+diabetic+nephropathy

Abstract: Background: Cross-sectional and family studies identified angiotensin-converting enzyme (ACE) gene as a risk factor for diabetic nephropathy (DN). The contribution of ACE gene variants to DN development and progression is controversial and varies among different ethnic/racial groups. Methods: We investigated the association of three ACE gene variants with DN, rs1799752 insertion/deletion (I/D), rs1800764T/C and rs12449782A/G in 917 Tunisian type 2 diabetic (T2DM) patients: 515 with (DN) and 402 without (DWN) nephropathy. ACE genotyping was done by PCR-based assays; haplotype estimation was performed using H-Plus software (chi(2)-test based). Results: Genotype frequency distributions of the three studied variants were in Hardy-Weinberg equilibrium. Minor allele frequency of rs1800764 was higher in DN patients than DWN patients or healthy controls, and minor allele frequency of rs1799752 was higher in DN than DWN patients. Higher frequency of rs1799752 and rs1800764 homozygous mutant genotypes was seen in DN compared to DWN patients. Of the three variants, only rs1799752 deletion/deletion (D/D) genotype was associated with a significant increase in albumin to creatinine ratios levels, and D/D carriers had elevated low-density lipoprotein, total cholesterol and urea. Three locus haplotype \([rs1799752(I/D)/rs1800764(T/C)/rs12449782(A/G)])\ analysis revealed that the frequency of DCG haplotype was higher, while that of ITG and ICA haplotypes were lower among unselected type 2 diabetic patients. Taking ITA haplotype as reference, multivariate regression analysis confirmed the negative (ITG), and positive (DCG, DTG, DCA and DTA) association of specific ACE haplotypes with DN, after adjusting for potential nephropathy-linked covariates.

Conclusions: Our results support the involvement of specific ACE variants in DN pathogenesis and demonstrate the presence of DN-specific haplotypes at the ACE locus.


Abstract: Aim: The association of altered plasminogen activator inhibitor (PAI)-1
levels and PAI-1 polymorphisms (4G/5G and -844G/A) with diabetic retinopathy (DR) was investigated in 856 type 2 diabetes (T2D) patients, of whom 383 presented with (DR group), and 473 presented without (DWR group), retinopathy. Methods: PAI-1 4G/5G and -844G/A genotyping were done by PCR-RFLP, and PAI-1 levels were measured by ELISA testing. Results: The genotype distribution of 4G/5G and -844G/A polymorphisms did not deviate from the Hardy-Weinberg equilibrium model among healthy subjects. Higher frequencies of the 4G/4G genotype, and lower frequencies of the -844A allele, -844G/A and -844A/A genotypes, were seen in DR patients, conferring disease susceptibility and protection, respectively. While PAI-1 levels were significantly elevated in the 4G/4G compared with other PAI-1 genotypes, significant differences in PAI-1 levels between DR and DWR patients were seen in the 4G/-844A, 4G/-844G and 5G/-844A haplotype carriers among DR patients. However, comparable distributions of 4G/5G and -844G/A alleles, genotypes and haplotypes, and similar PAI-1 levels, were seen in the proliferative retinopathy (PR) and non-proliferative retinopathy (NPR) patients, indicating that neither PAI-1 variants nor changes in PAI-1 levels were linked to DR severity. Multivariate analyses identified 4G/-844A and 4G/-844G haplotypes as negatively and positively associated, respectively, with DR, but not with DR severity (PR vs NPR) after adjusting for a number of covariates. Conclusion: The present study identifies changes in PAI-1 levels and genetic variations at the PAI-1 locus as risk factors for DR, but not DR severity that may serve as useful markers of increased DR susceptibility.


Abstract: Background: Candidate gene and genome-wide association studies have both reproducibly identified several common Single Nucleotide Polymorphisms (SNPs) that confer type 2 diabetes (T2D) risk in European populations. Our aim was to evaluate the contribution to T2D of five of these established T2D-associated loci in the Arabic population from Tunisia. Methods: A case-control design comprising 884 type 2 diabetic patients and 513 control subjects living in the East-Center of Tunisia was used to analyze the contribution to T2D of the following SNPs: E23K in KCNJ11/Kir6.2, K121Q in ENPP1, the -30G/A variant in the pancreatic beta-cell specific promoter of Glucokinase, rs7903146 in TCF7L2 encoding transcription factor 7-like2, and rs7923837 in HHEX encoding the homebox, hematopoietically expressed transcription factor. Results: TCF7L2-rs7903146 T allele increased susceptibility to T2D (OR = 1.25 [1.06-1.47], P = 0.006) in our study population. This risk was 56% higher among subjects carrying the TT genotype in comparison to those carrying the CC genotype (OR = 1.56 [1.13-2.16], P = 0.002). No allelic or genotypic association with T2D was detected for the other studied polymorphisms. Conclusion: In the Tunisian population, TCF7L2-rs7903146 T allele confers an increased risk of developing T2D as previously reported in the European population and many other ethnic groups. In contrast, none of the other tested SNPs that influence T2D risk in the European population was associated with T2D in the Tunisian Arabic population. An insufficient power to detect minor allelic contributions or genetic heterogeneity of T2D between different ethnic groups can explain these findings.

Ezzidi I, Mtiraoui N, Kacem M, Mallat SG, Mohamed MB, Chaieb M, Mahjoub T, Almawi WY.
Interleukin-10 -592C/A, -819C/T, and -1082A/G promoter variants affect the susceptibility to nephropathy in Tunisian type 2 diabetes patients. Clin Endocrinol (Oxf) 2008; (70): 401-7.

Available at: http://www.ncbi.nlm.nih.gov/pubmed/18616700?dopt=Citation

Abstract: Background: The IL-10 polymorphic variants -1082G/A, -819C/T, and -592C/A were linked with obesity, metabolic syndrome, and type 2 diabetes (T2DM). We investigated the hypothesis that IL-10 promoter polymorphisms may be associated with the progression of diabetic nephropathy (DN). Design: Case-control study. Patients: Study subjects comprised 515 DN patients, and 402 normoalbuminuric (DWN) T2DM patients. Measurements: IL-10 genotyping was done by PCR-based assays, and the contributions of the IL-10 polymorphic variants to DN were analyzed by haplotype analysis and multivariate regression analysis. Results: Decreased prevalence of (mutant) -819T allele and -819C/T genotype was seen in DN patients; neither the -1082G/A nor the -592C/A polymorphism was associated with DN. Three-loci haplotype (-1082GA/-819CT/-592CA) analysis identified GTC as DN-protective haplotype. Multivariate regression analysis confirmed the association of GTC haplotype (P = 0.045; OR = 0.56, 95% CI: 0.31-0.99), and in addition identified GTA haplotype (P=0.044; OR=0.54, 95% CI: 0.30-0.98) as independent predictors of DN after controlling for a number of covariates (age, sex, BMI; hypertension, glucose, HbA1c, DN duration, total cholesterol, medications). Conclusion: This study suggests that IL-10 promoter polymorphism influence the risk of nephropathy in Tunisian T2DM patients.


Available at: http://www.ncbi.nlm.nih.gov/pubmed/17973941?dopt=Citation

Abstract: Objective: The possible association between the endothelial nitric oxide (eNOS) gene T-786C (promoter region), 27-bp repeat 4b/4a (intron 4), and Glu298Asp (exon 7) polymorphisms with diabetic retinopathy (DR) was investigated. Design: A retrospective case-control study. Patients: A total of 872 type 2 diabetes (T2DM) patients were studied, of whom 383 presented with preproliferative/proliferative retinopathy (DR group), and 489 with absent/mild retinopathy (DWR group). Measurements: Glu298Asp and T-786C genotyping was carried out by PCR-RFLP analysis, while 4b/4a was assessed by PCR. Genotype distribution was compared using the chi(2)-test, and the contributions of the polymorphisms to DR were analysed by haplotype analysis and multivariate regression analysis. Results: Lower prevalence of mutant 4a (P=0.011), and heterozygous 4b/4a (P=0.042) were seen in the DR compared to the DWR groups; the allele and genotype distribution of the Glu298Asp and T-786C polymorphisms were comparable between DR and DWR groups. Three-loci haplotype analysis demonstrated significant association between eNOS variants and DR, with protective [haplotype 122 (Glu298/4a/-786C)], and susceptible haplotypes [haplotypes 112 (Glu298/4b/-786C) and 222 (Asp298/4a/-786C)] identified. Multivariate regression analysis confirmed the association between haplotypes 122 (P=0.015); 112 (P=0.027), and 222 (P=0.048) and DR, after controlling for potential covariates (including age, sex, age of disease onset; HbA1c; hypertension, total cholesterol). Conclusions: This study identifies genetic variation at the eNOS locus as genetic risk factor for diabetic retinopathy, which may serve as a useful marker of increased susceptibility to the risk of retinopathy.

Ezzidi I, Mtiraoui N, Mohamed MB, Mahjoub T, Kacem M, Almawi WY. Association of


Abstract: Background: Nitric oxide (NO) produced by endothelial NO synthase (eNOS) mediates a wide range of processes, and abnormal NO production mediated diabetes complications, including diabetic nephropathy (DN). In view of their impact on eNOS activity, polymorphisms in eNOS gene were described as candidates for atherosclerosis and DN. Aims: We evaluated the association of -786T>C (promoter region), Glu298Asp (Exon 7), and 4b4a (Intron 4) polymorphisms in eNOS gene with Type 2 diabetes mellitus (T2DM) and DN by haplotype analysis. Subjects and methods: Study subjects comprised 515 DN patients, 402 normoalbuminuric [diabetes with no nephropathy (DWN)] T2DM patients, and 748 healthy subjects. -786T>C and Glu298Asp genotyping were done by PCR-RFLP analysis. Results: Higher prevalence of mutant Asp298, 4a, and -786C alleles and homozygous Asp298/Asp298 and 4a/4a genotypes were seen in T2DM patients compared to healthy subjects, with increased Asp298/Asp298 seen in DN compared to DWN patients (P<.05). Three-loci haplotype analysis demonstrated significant association between eNOS variants and T2DM, with protective, neutral, T2DM, and DN-susceptible haplotypes identified, the latter including Asp298/4b/-786T and the Asp298/4a/-786C haplotypes that were present at higher frequencies among DN than among DWN patients. Multivariate regression analysis identified only Asp298/4a/-786T haplotype to be associated with DN (P=.047) after controlling for potential covariates. Conclusion: Genetic variation at the eNOS locus is associated with T2DM. It can serve as a useful genetic marker of increased susceptibility to T2DM and its complications, including the risk of nephropathy.

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Available at: http://www.bahrainmedicalbulletin.com/march_2013/breast-cancer.pdf

Abstract: Objective: To evaluate breast cancer knowledge among Bahraini women aged 20 years and more attending primary health care centers. Setting: Primary health care. Design: Cross sectional descriptive study. Method: Three hundred Bahraini women attending the primary health care clinics were interviewed from 1st February to 31st May 2005. A multistage sample was selected with a cluster sampling technique for the selection of one health center from each region; five health centers were selected. The sample was stratified according to the percentage of females residing in each region. A semi-structured questionnaire was used for interviewing the study participants. Result: Seventeen (5.6%) women knew more than half of the correct answers, and the mean “Percent Knowledge Index” was 32.1% ± 12.7%. Newspapers, television, radio, were identified as the main source of knowledge of breast cancer. Highly educated women were more knowledgeable about breast cancer (p=0.002), diagnostic modalities (p=0.008), and risk factors (p<0.0001). Women with positive family history of breast cancer knew more about treatment modalities than those without a history (p=0.017). Moreover, no significant differences were found between the general knowledge and its subtypes among women with positive or negative personal history of breast complaints.

Available at: http://www.ncbi.nlm.nih.gov/pubmed/20106534

Abstract: We investigated the association of tumor necrosis factor-alpha (TNFalpha) gene polymorphisms with idiopathic recurrent miscarriage (RM). TNFalpha -1031T/C, -863C/A, -857C/T, -376G/A, -308G/A, -238G/A, and +488G/A single nucleotide polymorphisms (SNPs) were investigated in 204 RM women and 248 age-matched parous women by PCR-restriction fragment length polymorphism. Significantly higher frequencies of -1031C and -376A alleles were seen in RM patients; significant differences were also noted in the distribution of -1031T/C, -376G/A, and -238G/A genotypes between case and control subjects. Haploviv analysis revealed high linkage disequilibrium between -857C/T and +488G/A SNPs, but was lower between the other polymorphisms. Of the possible 52 seven-locus haplotypes constructed, 10 were common, and were included in subsequent analysis. Increased frequency of CCCGGGG and CCCGGAA haplotypes, and reduced frequency of TCCGGGG and TCCGGGA haplotypes were seen in RM patients than in controls. When the Bonferroni correction was applied, differences were significant for the CCCGGAA haplotype, which was higher (OR=1.60; 95% CI=1.22-2.10), and the TCCGGGA haplotype, which was lower among RM cases (OR=0.50; 95% CI=0.29-0.90), thereby conferring RM susceptibility and protection to these haplotypes, respectively. Multivariate analysis confirmed the positive association of only CCCGGAA haplotype with RM (P=0.010; aOR=2.03; 95% CI=1.18-4.47), after controlling for a number of covariates. These results demonstrate that the TNFalpha polymorphisms, in particular the -1031T/C variant, are significantly associated with idiopathic RM. Additional replication studies on other racial groups are needed to confirm our findings.


Available at: http://www.ncbi.nlm.nih.gov/pubmed/?term=STAT3+polymorphisms+linked+with+idiopathic+recurrent+miscarriages

Abstract: Problem: We investigated the association of signal transducers and activators of transcription (STAT)3 gene variants with idiopathic recurrent miscarriage (RM). Method of study: A case-control study involving 189 RM patients and 244 control women was carried out. STAT3 (rs1053004 and rs1023023) genotyping was performed by allelic discrimination/real-time PCR method. Results: STAT3 rs1053004 C allele [OR (95% CI) = 1.60 (1.22-2.10)] and C/C genotype [OR (95% CI) = 3.42 (1.70-6.92)] were positively associated with RM. Two-locus (rs1053004/rs1053023) haplotype analysis revealed increased frequency of CG and CA haplotypes in RM patients, of which only CA haplotype (Pc = 0.020) remained positively associated with RM after applying the Bonferroni correction. This was confirmed by multivariate regression analysis (OR = 1.70; 95% CI = 1.17-2.46) after adjusting for a number of covariates. Conclusion: STAT3 rs1053004 variant is significantly associated with idiopathic RM. Replication studies on other racial groups and other STAT3 gene variants are warranted.

Froøjmark AS, Schuster J, Sobol M, Entesarian M, Kilander MBC, Gabrikova D, Nawaz S,

Abstract: Pedigrees in which some family members were affected by isolated nail dysplasia that suggested an autosomal-recessive inheritance pattern and was characterized by claw-shaped nails, onychauxis, and onycholysis. Genome-wide SNP array analysis of affected individuals from both families showed an overlapping and homozygous region of 800 kb on the long arm of chromosome 8. The candidate region spans eight genes, and DNA sequence analysis revealed homozygous nonsense and missense mutations in FZD(6), the gene encoding Frizzled 6. FZD(6) belongs to a family of highly conserved membrane-bound WNT receptors involved in developmental processes and differentiation through several signaling pathways. We expressed the FZD(6) missense mutation and observed a quantitative shift in subcellular distribution from the plasma membrane to the lysosomes, where the receptor is inaccessible for signaling and presumably degraded. Analysis of human fibroblasts homozygous for the nonsense mutation showed an aberrant response to both WNT-3A and WNT-5A stimulation; this response was consistent with an effect on both canonical and noncanonical WNT-FZD signaling. A detailed analysis of the Fzd(6)(-/-) mice, previously shown to have an altered hair pattern, showed malformed claws predominantly of the hind limbs. Furthermore, a transient Fdz6 mRNA expression was observed in the epidermis of the digital tips at embryonic day 16.5 during early claw morphogenesis. Thus, our combined results show that FZD6 mutations can result in severe defects in nail and claw formation through reduced or abolished membranous FZD(6) levels and several nonfunctional WNT-FZD pathways.


Abstract: Background: Hypertensive crisis (HC) is a common medical emergency associated with acute rise in arterial blood pressure that leads to end-organ damage (EOD). Therefore, it is imperative to find markers that may help in the prediction of EOD in acute hypertensive crisis. Aim: To assess the clinical presentations on admission; echocardiographic changes of pulsed and tissue Doppler echocardiographic changes in HC patients compared with no EOD; and the risk of developing end organ damage for clinical and biochemical variables in hypertension crisis. Material and Methods: The data of 241 patients with hypertensive crisis with systolic blood pressure (SBP) of 180 mmHg or diastolic blood pressure (DBP). 120 mmHg were extracted from patients files. Patients divided into hypertensive emergency (HE) with EOD, n=62 and hypertensive urgency (HU) without EOD, n=179. LV hypertrophy on ECG, echo parameters for wall thickness, left Ventricular mass index (LVMI), Body mass index
(BMI), pulse Doppler ratio of early filling velocity E wave to late A wave (E/A) and ratio of E wave velocity to tissue Doppler Em to E wave (E/Em) were evaluated. Serum creatinine, hemoglobin, age, gender, body mass index (BMI), history of diabetes mellitus, smoking, hypertension, stroke and hyperlipidemia were recorded. Multiple logistic regression analysis was applied for risk prediction of end organ damage of clinical variables.


Abstract: Background: Clinical and animal studies suggest that the ischemic heart can be particularly vulnerable to hypokalemia leading to the cardiac arrhythmia. Objective: To evaluate the association of severe arrhythmia with hypokalemia in patients with acute myocardial infarction (AMI). Design: Retrospective study. Setting: Coronary Care Unit, Salmaniya Medical Complex. Method: Two hundred and seventy-four patients with AMI had serum potassium levels measured on admission along with other cardiovascular risk factors. Result: Serum potassium concentrations were significantly decreased with the severity of arrhythmias (no arrhythmias; 4.2 ± 0.80 mmol/l, supra-ventricular; 3.8 ± 0.9 mmol/l, and ventricular arrhythmias; 3.3 ± 0.5 mmol/l, p=0.0001). The risks of supra-ventricular and ventricular arrhythmias were significantly increased by 2.4 and 8.3 fold, respectively in patients with serum potassium levels at the lowest quartile (<3.5 mmol/l) compared with the highest quartile of serum potassium when adjusted for other risk factors. Conclusion: The results of this study suggest that hypokalemia is independently associated with the severity of arrhythmias in patients with AMI.


Abstract: Background: Chelating therapy in transfusion-dependent patients with β-thalassemia major (β-TM) is mandatory to reduce the toxic effect of iron on the myocardium. Aim: To evaluate the impact of low and high dose of oral chelating therapy (deferasirox) on pulsed and tissue echocardiographic indices in patients with β-TM. Methods: This interventional study conducted on patients with transfusion-dependent β-TM (n=38) on deferasirox 20 mg/kg/d medication, group (DFX-20) for at least 6 months, followed by administration of a higher dose of deferasirox, 40 mg/kg/d, group (DFX-40) for another 6 months. Pulsed and tissue Doppler echocardiography carried out at the beginning and at the end of treatment interval (6 months) for both groups, with monthly blood analysis of serum ferritin, alanine transaminase, hemoglobin, and creatinine. An age-matched control group of 38 patients was evaluated for echo Doppler blood analysis. Results: Patients of group DFX-40 compared with group DFX-20, the tissue Doppler echocardiogram showed lower E/Em ratio (16.01 ± 2.85 vs. 19.68 ± 2.81, P<0.05), higher systolic wave velocity (Sm) (5.87 ± 1.40 vs. 4.80 ± 1.20, P<0.05), and higher early diastolic wave (Em) velocity (4.25 ± 1.70 vs. 3.50 ± 1.80, P<0.05), respectively. Patients in group DFX-20, compared with control group, had M-Mode echo with thicker left ventricle (LV) septal wall (P<0.001) and posterior wall (P<0.01), higher left ventricle end diastolic diameter index (P<0.05). The pulsed Doppler echocardiogram showed a higher LV transmitial
E wave velocity (P<0.05), higher E/A ratio (P<0.01), and the duration of deceleration time was significantly shorter (P<0.01). There were no significant changes observed in the left ventricle ejection fraction percentage (LVEF%) or fractional shortening between both treatment groups. Serum ferritin was significantly lower in DFX-40 group compared with DFX-20 β-TM group (338). There was a significant positive correlation between the serum ferritin and the E/Em ratio (r=0.31, P<0.001). The tricuspid valve velocity was significantly higher in β-TM patients compared with the control group (P<0.05).

Conclusion: The increment of oral deferasirox as chelating therapy in β-TM patients to 40 mg/kg/d over 6 months duration showed a significant increments of systolic and diastolic tissue Doppler velocities with a significant reduction of E/Em ratio in comparison with 20 mg/kg/d. There were no changes of LVEF. A longer duration of follow-up may be justified in such group of patients.


Available at: http://www.la-press.com/pulsed-and-tissue-doppler-echocardiographic-changes-in-patients-with-t-article-a1921

**Abstract:** Background: Doppler echocardiographic studies of left ventricle (LV) systolic and diastolic function in patients with β-Thalassemia Major (β-TM) had shown different patterns of systolic and diastolic dysfunction. Aim: This cross-sectional study was designed to study the LV systolic and diastolic function in patients with β-TM using Pulsed Doppler (PD) and Tissue Doppler (TD) echocardiography. Methods: All patients were evaluated clinically and by echocardiography. The study included patients with β-TM (n = 38, age 15.7 ± 8.9 years) compared with an age-matched control group (n = 38, age 15.9 ± 8.9 years). The pulse Doppler indices were normalized for age and heart rate. Results: Compared with control patients, M-Mode showed that patients with β-TM have thicker LV septal wall index (0.659 ± 0.23 vs. 0.446 ± 0.219 cm, P < 0.001), posterior wall index (0.659 ± 0.235 vs. 0.437 ± 0.214 cm, P < 0.01), and larger LVEDD index is (3.99 ± 0.48 vs. 2.170 ± 0.57 mm. P = 0.035). Pulsed Doppler showed high LV trans-mitral E wave velocity (70.818 ± 10.139 vs. 57.532 ± 10.139, p = 0.027) and E/A ratio (1.54 vs. 1.23, P < 0.01). The duration of Deceleration time (DT) and isovolumic relaxation time (IVRT) were significantly shorter in patients with β-TM (150.234 ± 20.0.23 vs. 167.123 ± 19.143 msec, P < 0.01) and (60.647 ± 6.77 vs. 75.474 ± 5.83 msec, P < 0.001), respectively. The ratio of transmitral E wave velocity to the tissue Doppler E wave at the basal septal mitral annulus E/Em- was significantly higher in β-TM group (14.024 ± 2.29 vs. 12.132 ± 1.82, P < 0.01). The Tissue Doppler systolic velocity (Sm) and the early diastolic velocity (Em) were significantly lower in β-TM group compared to control (4.31 ± 1.2 cm/s vs. 6.95 ± 2.1, P < 0.01 and 4.31 ± 2.7 cm/s vs. 5.82 ± 2.5, P < 0.01) respectively. The tricuspid valve velocity was significantly higher than controls (2.993 ± 0.569 vs. 1.93 ± 0.471 m/sec, respectively, P < 0.01). However, the LVEF% and fractional shortening were normal with no significant difference in both groups. Conclusion: In this study, patients with β-thalassemia major compared with controls, have significantly thicker LV wall, and larger LV cavity and LV diastolic filling indices suggestive of restrictive pattern with a higher tricuspid valve velocity. These data showed that left ventricle diastolic indices are compromised initially in patients with β-thalassemia major.

Available at: http://www.ncbi.nlm.nih.gov/pubmed/?term=Qtc+Interval+and+QTc+Dispersion+in+Patients+with+Thalassemia+Major+%3A+Electro-cardiographic+(EKG)+and+Echocardiographic+Evaluation.

Abstract: Background: Doppler echocardiographic studies in patients with beta-Thalassemia Major (beta-TM) had shown different patterns of left ventricle (LV) systolic and diastolic dysfunctions. Aim: This cross-sectional study was designed to study the LV systolic and diastolic function in patients with beta-TM using Pulsed Doppler (PD) Echocardiogram and assess the QTc interval and QT dispersion (QTd) on 12 leads ECG. Method: All patients were evaluated clinically as well as by echocardiography and 12 leads ECG. The study included patients with beta-TM (n = 38, age 15.7 +/- 8.9 years), compared with an age-matched healthy control group (n = 38, age 15.9 +/- 8.9 years). Results: In 38 patients with beta-TM Compared with healthy control group, The QTc interval and the QTd dispersion on ECG were increased with no significant difference mode echo showed that beta-TM patients have thicker LV septal wall index (0.659 +/- 0.23 vs. 0.446 +/- 0.219 cm/M(2), P < 0.001), posterior wall index (0.659 +/- 0.235 vs. 0.437 +/- 0.214 cm/M(2), P < 0.01), and larger LVEDD index is (3.99 +/- 0.48 vs. 2.170 +/- 0.57 cm/M(2). P < 0.05). Pulsed Doppler showed high LV trans-mitral E wave velocity index (70.818 +/- 10.139 vs. 57.532 +/- 10.139, P < 0.05) and E/A ratio (1.54 vs.1.23, P < 0.01). The duration of deceleration time index (DT) and isovolumic relaxation time index (IVRT) were significantly shorter in patients with beta-TM (150.234 +/- 20.0.23 vs. 167.123 +/- 167.123 +/- 19.143 msec/M(2), P < 0.01) and (60.647 +/- 6.77 vs. 75.474 +/- 5.83 msec/M(2), P < 0.001), respectively. The tricuspid valve velocity in patients with beta-TM was significantly higher than controls (2.993 +/- 0.569 vs. 1.93 +/- 0.471 m/sec, respectively, P < 0.01), with calculated pulmonary artery pressure of 2.4 times the control (36.0 vs. 14.8 mmHg). However, the LVEF% or fractional shortening were not significantly different.Conclusion: In this study, beta-thalassemia major patients compared with controls have differences of QT dispersion and corrected QT interval that is of no statistical significance. A significantly thicker LV wall and LV diastolic filling indices are suggestive of restrictive diastolic pattern. These data indicate that LV diastolic abnormalities compromised initially in patients with beta-thalassemia major.


Available at: http://www.ncbi.nlm.nih.gov/pubmed/21234293

Abstract: Doppler echocardiographic studies of the left ventricle (LV) function in patients with β-Thalassemia Major (β-TM) had shown different patterns of systolic and diastolic dysfunctions associated with abnormal serum brain natriuretic peptide (BNP). Aim: This cross-sectional study was designed to study the LV systolic and diastolic functions and correlate that with serum level of N-terminal pro brain natriuretic hormone (NT- pro BNP) in patients with β-TM using Pulsed Doppler (PD) and Tissue Doppler (TD) echocardiography. Methods: The study was conducted on patients with β-TM (n=38, age 15.7 ± 8.9 years) and compared with an age-matched controls (n=38, age 15.9 ± 8.9 years). In all participants, PD and TD echocardiography were
performed and blood samples were withdrawn for measuring the serum level of NT-pro BNP, ferritin, and alanine transaminase. Results: Patients with β-TM compared with controls, have thicker LV septal wall index (0.65 ± 0.26 vs. 0.44 ± 0.21 cm, P < 0.001), posterior wall index (0.65 ± 0.23 vs. 0.43 ± 0.21 cm, P < 0.01), and larger LVEDD index (4.35 ± 0.69 vs.3.88 ± 0.153 mm, P < 0.001). In addition, β-TM patients have higher transmitral E wave velocity (E) (70.818 ± 10.139 vs. 57.532 ± 10.139, p = 0.027) and E/A ratio (1.54 ± 0.17 vs. 1.23 ± 0.19, P < 0.01) and shorter deceleration time (DT) (160.13 ± 13.3 vs. 170.50 ± 19.20 m sec, P < 0.01). Furthermore, the ratio of transmitral E wave velocity to the tissue Doppler E wave at the basal septal mitral annulus (E/Em(-)) was significantly higher in β-TM group (19.6 ± 2.81 vs. 13.868 ± 1.41, P < 0.05). The tissue doppler systolic wave (Sm) velocity and the early diastolic wave (Em) were significantly lower in β-TM group compared to controls (Sm: 4.82 ± 1.2 vs. 6.22 ± 2.1 mm/sec, P < 0.05; Em: 3.51 ± 2.7 vs. 4.12 ± 2.5 mm/sec P < 0.05, respectively). The tricuspid valve velocity was significantly higher in β-TM patients compared with controls (2.993 ± 0.569 vs. 1.93 ± 0.471 m/sec, respectively, P < 0.01). The mean serum NT pro-BNP in β-TM was significantly higher compared with controls (37.6 ± 14.73 vs. 5.5 ± 5.4pg/ml, P < 0.05). The left ventricle ejection fraction (EF%) and fractional shortening (FS%) were not significantly different between both groups. Conclusion: We conclude that patients with β-TM had a significantly higher serum level of NT-pro BNP that is positively correlated with the E/Em ratio on tissue Doppler. Furthermore, we confirm our previous findings that patients with β-TM exhibit LV diastolic pattern on echocardiogram suggestive of restrictive type with well preserved left ventricle systolic function.


Abstract: P-selectin (SELP) and its counter-receptor, P-selectin glycoprotein ligand-1 (PSGL-1), play key role in the transient attachment of leukocytes to endothelial cells predisposing to coronary heart disease (CHD). In the current report, 293 angiographically proven CHD patients and 327 age, gender, and race-matched controls were included. Our aim was to evaluate the contribution to CHD of the following SNPs: C-2123G, G-1969A and T715P in SELP, Met62Ile and the VNTR variants in PSGL-1 gene in a North African population from Tunisia. While there were no significant differences in the distribution of SELP or PSGL-1 alleles or genotypes between patients and controls, a trend for a significant association of the C-2123G genotypes distribution with incident CHD was observed (P=0.06). Assuming an additive model of transmission, the risk was 74% higher among subjects carrying the GG genotypes in comparison to those carrying the CC genotype (OR=1.74 [1.01-2.98], P=0.04) and 80% higher in the recessive model (OR=1.80 [1.08-3.01], P=0.02). Haplotype analysis did not identify any specific SELP or PSGL-1 haplotypes to be associated with CHD. The present study demonstrated no evidence of association between individual SELP or PSGL-1 SNPs or haplotypes with incident CHD. However, this study replicates absence of association of the mostly studied SNP, T715P, previously reported in individuals with African origin.

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Abstract: Objective: Our aim was to evaluate the contribution of tumor necrosis factor (TNF)-alpha -308G>A and interleukin (IL)-6 -174G>C gene promoter variants to the presence of coronary artery disease (CAD) in Tunisians. Design and Methods: Study subjects comprised 418 angiographically proven CAD patients and 406 age-, gender-, and ethnic origin-matched controls. Genotyping was performed using polymerase chain reaction (PCR) and restriction fragment length polymorphism (RFLP) analysis. Results: There were no significant differences in the allelic distribution of TNF-alpha -308A (19.6% vs. 19.0%, P=0.73), and IL-6 -174C (15.6% vs. 14.3%, P=0.47) promoter polymorphisms between CAD patients and control subjects, respectively. In addition, single locus analysis revealed no differences in genotype frequencies between the two study groups, and the combined distribution of both genotypes did not differ significantly between controls and CAD patients (P>0.05). Conclusion: There is no allelic or genotypic association of TNF-alpha -308G>A and IL-6 -174G>C promoter polymorphisms with CAD in Tunisians, thereby confirming an ethnic-selective contribution of both gene variants to CAD presence.


Available at: http://www.ncbi.nlm.nih.gov/pubmed/?term=Association+of+three+polymorphisms+selected+from+a+genome-wide+association+study+with+coronary+heart+disease+in+the+Tunisian+population

Abstract: Despite extensive exploration of many genes, strong evidence of a molecular genetic association with coronary heart disease (CHD) or myocardial infarction (MI) remains to be obtained. Recently, significant interest has emerged in mapping genetic susceptibility for complex traits through whole-genome studies association generating promoting data that will determine the genetic contribution to common human diseases such as coronary heart disease. The aim of the present case-control study including 324 healthy controls and 296 patients with coronary heart disease from Tunisia, was to assess relation between three polymorphisms previously reported to be strongly associated with coronary heart disease in the Welcome Trust Case Control Consortium (WTCCC) and the German myocardial infarction family studies: locus 9p21.3 (rs 1333049), locus 6q25.1 (rs6922269) and 2q36.3 (rs2943634). By single locus analysis, no differences in genotype distribution and allelic frequency were found between the two groups of study. The risk allele (C) for rs2943634 was less frequent among Tunisian population than in controls from the WTCCC and German studies (57% vs 65%). The three SNPs previously reported to be associated with CHD were not replicated in our small sample.


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Abstract: P-selectin plays a key role in inflammation and atherosclerosis, and
polymorphic variants of P-selectin were implicated in the pathogenesis of atherosclerotic and inflammatory changes, including coronary heart disease (CHD) in many ethnic groups. We investigated the contribution of P-selectin promoter (-2123C/G, -1969G/A) and exon (Ser290Asn, Asn562Asp, Thr715Pro) polymorphisms to CHD genetic susceptibility among 298 Tunisian CHD patients and 339 controls. Minor allele and genotype frequencies of the five P-selectin SNPs were comparable between patients and controls, except for -2123G/G genotype which was more frequent in cases. The 715Pro allele was present at lower frequency in Europeans, and was not protective of CHD. Linkage disequilibrium was seen between -1969G/A, and both Ser290Asn and Asn562Asp. Five-loci haplotype analysis did not identify any CHD-protective or CHD-susceptible haplotypes. To our knowledge, this was the first case-control study to be performed on an Arab/North-African population, and demonstrates that none of the five P-selectin polymorphisms investigated influence CHD susceptibility in Tunisian Arabs.


Abstract: Elevation in homocysteine and methylenetetrahydrofolate reductase (MTHFR) gene variants, C677T and A1298C, have been linked with atherothrombosis. However their exact contribution to coronary artery disease (CAD) remains controversial. Moreover, data from Tunisian patients are scarce. We examined the association of MTHFR C677T and A1298C, and changes in plasma homocysteine in 352 Tunisian patients with angiographically-demonstrated CAD, and 390 age and gender-matched healthy subjects. Significantly higher frequency of 677T allele and homozygous 677T/T genotype were seen in patients vs. control subjects; the distribution of A1298C alleles and genotypes being comparable in the two groups. Specific MTHFR haplotypes comprising 677C/1298A (P < 0.001) and 677T/1298A (P < 0.001) were negatively and positively associated with CAD, respectively. Plasma homocysteine concentration was significantly higher in 677T/T genotype with respect to 677C/C and 677C/T genotypes in patients and controls, but homocysteine levels were generally comparable between both groups. Univariate analysis identified 677T/1298A (P = 0.033) haplotype to be positively associated with CAD, which remained significant by multivariate analysis after adjusting for a number of covariates (P = 0.038). MTHFR C677T, but not A1298C SNPs, is associated with CAD and with elevated homocysteine levels in a Tunisian population. The negative and positive association of the 1298A allele with CAD being indicative of a neutral (absent) effect of the A1298C SNP on disease pathogenesis.

Abstract: Background: Recent research has shown that inflammation plays a key role in coronary artery disease (CAD) and other manifestations of atherosclerosis. Several lines of evidence support a key role for tumor necrosis factor-alpha (TNF-alpha), a potent immunomodulator and pro-inflammatory cytokine, in the development of atherosclerosis and in complications of CAD. Methods: We investigated the possible association between CAD and the TNF gene promoter polymorphisms -308G>A and -1031T>C in a Tunisian population. We compared the distribution of these polymorphisms between 418 patients with CAD and 406 healthy controls using polymerase chain reaction restriction fragment length-polymorphism analysis. Results: The frequency of the TNF-alpha -308A allele in the control group was similar to that observed in CAD patients [p=0.78; odds ratio (OR)=1.15; 95% confidence interval (CI)=0.86-1.55], but higher than those described in other Europeans, such as in the French, Finnish and Spanish. Concerning the TNF-alpha -1031T/C polymorphism, the same distribution was observed between patients with CAD and controls (p=0.12; OR=1.27; 95% CI=0.94-1.72). In addition, the genotype and allele frequencies of control individuals were comparable to those previously reported in healthy Tunisian controls and other ethnic groups. Haplotype analysis (TNF-alpha -308G>A and -1031T>C) demonstrated no significant association between TNF haplotypes and CAD. Conclusions: We conclude that TNF promoter gene polymorphisms at position -308G>A and -1031T>C do not play a major role in the pathogenesis of CAD in the Tunisian population.


Abstract: Susceptibility to uncomplicated malaria (UM), as to other forms of the disease, is genetically determined. Over 9-years of clinical and parasitological follow up of inhabitants of Daraweesh, in Eastern Sudan, the relative susceptibility to UM was estimated in terms of number of episodes experienced by each individual. Previously, we reported that the levels of IgG2 and IgG3 to Pf332-C231 malaria antigen are negatively correlated with number of malaria episodes. In addition, four molecular markers for malaria susceptibility (CRP-286, GM/KM haplotypes, FcγRIIa131 and HbAS) were tested. In this study, the above data were combined and reanalysed. The CRP -286A allele and GM 1, 17 5, 13, 14, 6 phenotype were previously found to be associated with increased susceptibility to malaria; however, individuals have both polymorphism together were not more susceptible to UM than the non-carriers of the same double polymorphism. The FcγRIIa-RR131 and HbAA genotypes taken individually or as double polymorphism were not associated with malaria susceptibility; however, their combination with any or both of the former polymorphisms was mostly associated with increased susceptibility to malaria. None of the four markers were associated with the levels of IgG2 and IgG3 against Pf332-C231. In conclusion, while our data support the polygenic nature of susceptibility to UM and highlighted the role of immune markers polymorphisms, the combinations of these markers were not predictable, i.e. the combination of the susceptibility markers will not necessarily render the carriers more susceptible to UM.


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Abstract: The certainty of the protective role of acquired immunity in malaria is the major drive for malaria vaccine development. In this study, we measured the levels of total IgG and IgG subclasses to four candidate malaria vaccine antigens; MSP2-3D7, MSP2-FC27, AMA-1 and Pf332-C231, in plasma obtained from a cohort of 136 donors from Daraweesh in Sudan. The cohort was followed for malaria infection for 9 years. After an initial analysis, the immune response to Pf332-C231 antigen was the only one found associated with protection, thus taken for further analysis. The number of previous clinical malaria episodes experienced by the donors was used as an index for relative protection. The number of these episodes was found to be negatively correlated with the levels of pre-existing total IgG, IgG2 and IgG3 to Pf332-C231 (correlation coefficient, CC - 0.215, p=0.012; CC - 0.195, p=0.023 and CC - 0.211, p=0.014, respectively), and also with age (CC - 0.311, p<0.001). Unexpectedly, equal levels of Pf332-C231 antibodies were induced by both patent and sub-patent infections regardless of the number of previous malaria episodes (1-7). Combining the correlation analysis with a multi-linear regression, three variable markers for protection were emerged, two age-dependent, the antibody response to Pf332-C231 and an unidentified marker (likely immune response to other antigens), and the third was an age-independent unidentified marker (possibly gene polymorphisms). In conclusion, this report suggests a protective effect for IgG subclasses to Pf332-C231 antigen against malaria.


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Abstract: In malaria, drug resistance and treatment failure (TF) are not synonymous,
although are escalating together. Over 9 years of surveillances for malaria morbidity and TF in Daraweesh village in eastern Sudan (1991-2004), 136 donors (15-78 years) from 43 households, treated for 278 malaria episodes and had experienced 46 incident of TF, were included in this study. Blood obtained from the donors in 2005, was used for measurement of IgG subclasses against Pf332-C231 antigen and GM/KM allotyping and for genotyping of the donors for; Fc gammaRIIA 131 (HH, RH, RR), CRP 286 (C>T>A) and Hb AA/AS, polymorphisms. Results revealed that all treatment failures were experienced by 37 individual (TF-prone-individuals, TFpi), while the remaining donors were treated for 182 malaria episodes without TF (treatment responders, TR). In 7 households, all malaria patients were TFpi, while in 19 households all patients were TR. The TFpi compared with matched TR individuals (TRi), had significantly higher IgG1 levels (p=0.021), while IgG3/IgG1 ratio was significantly higher in the TRi (p=0.016). However, the frequencies of all tested polymorphisms (GM/KM, Fc gammaRIIA 131, CRP 286 and Hb AA/AS), were comparable between the study groups. In conclusion, there was clustering of TF at level of individuals and households with differences in base-line immunity between the TFpi and TRi. Together, the results suggest an immune-mediated genetic susceptibility to TF, as some of the tested polymorphisms showed trends but no significant association with TF.


Abstract: The role of inflammation in malaria pathogenesis is not fully understood, although C-reactive protein (CRP) may have a negative influence on host immunity to infections. An upstream polymorphism, -286 (C > T > A), in the CRP gene is known to influence CRP levels. In this study, a cohort of 192 Sudanese donors, followed for malaria infection for 9 years, had their CRP -286 gene locus genotyped by pyrosequencing. The number of malaria episodes experienced by each individual over the study period was used as an index for malaria susceptibility. The prevalence of the CRP alleles A, C and T were 21%, 52% and 27%, respectively. Importantly, the A-allele, unlike the C- and T-alleles or CRP genotypes, was significantly associated with an increased number of malaria episodes, P = 0.007. The proportion of A-allele carriers among donors not known to have had malaria during the study period was 18%, whereas it was 43% and 63% among donors who had experienced 1-4 and > or =5 malaria episodes, respectively, over the same period (P = 0.002). Furthermore, the A-allele was associated with higher parasite counts. In conclusion, the CRP -286 A-allele was associated with an increased susceptibility to uncomplicated plasmodium falciparum malaria.

Abstract: The artemisinin-based combination therapy (ACT) is adopted by several countries as first line for malaria treatment in the last decade. Concomitantly, the World Health Organization and other research reports showed a dramatic decline in malaria burden in terms of morbidity, mortality and treatment failure (TF). The optimistic features of ACT are regularly reported with great hopes, while the pessimistic facets either not existing or underreported. However, the dependence on ACT as a single chemotherapeutic agent for malaria control bears considerable risks. Occurrence and spread of artemisinin derivatives (AD) TF will be a major threat, whether it is due to parasite drug resistance or use of poor drug quality. In addition, the safety of AD is not yet fully known. In this short review, two clinical trials performed to evaluate the efficacy and safety of AD, dihydroartemisinin (DHA) plus chloroquine and artesunate (AS) plus fansidar, in Sudan are critically discussed. The conclusions from both studies were that, the TF rate of DHA indicates arrival of counterfeit AD to Africa, and both rate of TF and undesirable effects of AS/SP were recognized. Both findings indicate that it is too early for too much hope on AD.


Abstract: Chloroquine (CQ) is outdated as an antimalarial drug in most of the malarial world because of the high resistance rate of parasites. The parasite resistance to CQ is attributed to pfcrtpfmdr1 gene mutations. Recent studies showed that parasites with mutations of pfcrtpfmdr1 genes are less virulent, and that those with dhfr/dhps mutations are more susceptible to host immune clearance; the former and latter mutations are linked. In the era of artemisinin-based combination therapy, the frequency of pfcrtpfmdr1 wild variants is expected to rise. In areas of unstable malaria transmission, the unpredictable severe epidemics of malaria and epidemics of severe malaria could result in high mortality rate among the semi-immune population. With this in mind, the use of CQ for intermittent preventive treatment of adults (IPTa) is suggested as a feasible control measure to reduce malaria mortality in adults and older children without reducing uncomplicated malaria morbidity. The above is discussed in a multidisciplinary approach validating the deployment of molecular techniques in malaria control and showing a possible role for CQ as a rescue drug after being abandoned.


Abstract: An interpretation of historical, clinical, and laboratory data was made to identify the correlates of and the diversity between cerebral malaria (CM) and severe malarial anemia (SMA) in a setting of low, seasonal, and unstable malaria transmission in eastern Sudan. Hemoglobin (Hb), random blood glucose (RBG), and anti-MSP antibodies were measured. Results showed that SMA and CM were significantly different with regard to age, malaria history, fever duration, convulsions, and
hepatosplenomegaly. The MSP Ab response was inversely correlated with the number of previous malaria episodes but not with fever duration in the current attack. The spleen size was significantly inversely correlated with Hb level while hepatomegaly was significantly associated with low RBG. Furthermore, two malaria patients presented with neuropsychiatric upset. Finally, the correlates of SMA and CM fit perfectly with an adopted severity numeric scoring.


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Abstract:
Background: Plasmodium falciparum malaria is a complex disease in which genetic and environmental factors influence susceptibility. IgG isotypes are in part genetically controlled, and GM/KM allotypes are believed to be involved in this control.

Methods: In this study, 216 individuals from Daraweesh, an area of seasonal malaria transmission in Sudan, were followed for nine years for malaria infection. Total IgG and IgG isotypes against four malaria antigens, MSP2-3D7, MSP2-FC27, AMA1, and Pf332-C231 were measured in plasma obtained from the cohort at the end of the study, during the dry malaria-free period. The GM/KM allotypes of the donors were determined. Results: The GM 1,17 5,13,14,6 phenotype was associated with a higher incidence of malaria compared with the non-1,17 5,13,14,6 phenotypes (P = 0.037). Paradoxically, the carriers of the GM 1,17 5,13,14,6 phenotype had significantly higher baseline levels of total IgG and non-cytophilic IgG isotypes as compared to non-carriers. The KM allotypes influence on IgG isotypes level was limited. Finally, the differences in the baseline concentrations of total IgG and IgG isotypes between the different GK/KM phenotype carriers were antigen-dependent. Discussion: The results show that GM but not KM allotypes appeared to influence host susceptibility to uncomplicated malaria as well as the antibody profile of the donors, and the carriers of the GM 1,17 5,13,14,6 phenotype were the most susceptible Conclusions: The GM allotypes have significant influence on susceptibility to uncomplicated P. falciparum malaria and antigen-dependent influence on total IgG and IgG subclasses.


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Abstract: The parasite dynamics in severe malaria (SM) varies with malaria endemicity. This study was conducted in eastern Sudan, an area of seasonal and unstable malaria transmission. From the beginning of October to the end of December (malaria season) in the years 2000, 2001, and 2003, 99 patients with severe malarial anemia (SMA) and 54 patients with cerebral malaria (CM) were identified. There was marked variation in the incidence of SMA and CM (up to six folds) and in the CM/SMA incidence ratio, over 3 years. In the heavy season of 2003, CM peaked at the beginning of the season and declined within a month at a time that the SMA reached the peak. At diagnosis, the rate of gametocytemia had inclined from approximately 10% to 100% from the beginning to the end of the season. During follow-up, gametocytemia was more associated with SMA than with CM. Paradoxically, the late occurring SMA was associated with early gametocytemia (day 7) and the opposite was
true in CM. In conclusion, within the season the transmission of CM and SMA was bimodal, the prevalence of the asexual and sexual parasitemia was reciprocal, and the peaks of transmission and gametocytemia were paradoxical.


**Abstract:** Aims: The identification and quantitation of factors that are associated with the risk of retinopathy in diabetic patients is essential to be identified in different populations. Data exist for the risk factors associated with the prevalence and incidence of diabetic retinopathy in our population is limited. In this study, we assessed the association of risk factors including hyperhomocysteinemia with retinopathy in Iranian patients with type 2 diabetes. Methods: In a cross-sectional study, the association of biometric and biochemical characteristics of two hundred and fifty four established type 2 diabetic patients with or without retinopathy were investigated. Patients were classified by funduscopic examination and angiographic results into normal, non-proliferative and proliferative retinopathy. Results: Multiple logistic regression analysis showed that the risk of all type of retinopathy was significantly and independently associated with a longer duration of diabetes, hypertension and hyperhomocysteinemia. Subjects with hyperhomocysteinemia had more than 2.7-, 2.5-, and 2.5-fold risk of all type of retinopathy, non-proliferative and proliferative retinopathy, respectively, compared with the subjects with normal plasma tHcy when adjusted for other risk factors. Conclusion: We conclude that longer duration of diabetes, hypertension and hyperhomocysteinemia are independent risk factors associated with retinopathy in type 2 diabetes in our population.


**Abstract:** Background and Aims: Homozygosity for the thermolabile variant of 5, 10-methylenetetrahydrofolate reductase (C677T) has been suggested to be positively associated with the risk of vascular disease and neural tube defects. In addition, recent studies have suggested that elevated serum uric acid predicts ischemic heart disease, and epidemiological data on ethnic groups have suggested that genetic factors are determinants of serum uric acid levels. In this study, we tested the hypothesis that 5, 10-methylenetetrahydrofolate reductase (C677T) polymorphism may be associated with hyperuricemia. Methods and results: Samples from 518 healthy individuals (268 men and 250 women) were analyzed for MTHFR genotyping and serum uric acid. The participants were categorized to homozygous wild type (CC), heterozygous for wild type and thermolabile (CT), or homozygous for the thermolabile (TT) variant. Serum
uric acid was significantly higher in males and females with TT genotype than those with either CC or CT genotype (p=0.0001, ANOVA). Univariate and multivariate analysis showed that 5,10-methylenetetrahydrofolate reductase (C677T) polymorphism was a strong correlate and predictor of uric acid in males (r=0.28, p=0.0001, beta=0.673, p=<0.001) and in females (r=0.27, p=0.0001, beta=0.599, p=<0.001). Odds ratio analysis has also shown that the risk of hyperuricemia was greater in males (OR 3.1, CI 1.8-5.2, p=0.001) and females (OR 3.3, CI 1.9-5.7, p=<0.001) with CT genotypes and in males (OR 3.7, CI 1.3-10.7, p=0.014) and females (OR 3.2, CI 1.1-9.7, p=0.032) with TT genotypes than in those with CC genotypes. Conclusion: Results from this study suggest that mutation of 5-MTHFR C677T contributes to the higher uric acid levels in both males and females and may be a risk factor for hyperuricemia.


Abstract: Association between elevated plasma homocysteine levels and insulin resistance has been reported, however, whether hyperhomocysteinemia induces insulin resistance or it is actually hyperinsulinemia that causes elevated plasma homocysteine levels, the direction of causality in this association is not still clear. In this study, we examined the hypothesis that hyperhomocysteinemia may cause hyperinsulinemia leading to insulin resistance in rats. Plasma glucose, insulin and total homocysteine concentrations were determined in two groups of male Sprague-Dawley rats, a test group that administered with homocysteine and a control group with no homocysteine in daily drinking water before and after 50 days. Oral glucose tolerance tests were also performed in control and test groups before and after 50 days. Mean fasting plasma insulin level was significantly higher (42.5+/−20.4 mU/L versus 23.2+/−5.9 mU/L, p=0.01), whereas mean glucose: insulin ratio was significantly lower in test rats than in control rats (0.12+/−0.07 versus 0.17+/−0.05, p=0.04) after 50 days. In addition, mean homeostasis assessment insulin resistance index was significantly higher in test rats than in control rats (7.5+/−3.5 versus 4.0+/−1.6, p=0.02) after 50 days. The mean plasma glucose level was not significantly different (4.1+/−1.1 mmol/L versus 3.9+/−0.8 mmol/L, p=0.57) between controls and test rats, however, the results from oral glucose tolerance tests showed the development of insulin resistance in test rats after 50 days administration of homocysteine. Results from this in vivo study suggest that homocysteine can cause insulin resistance and this relationship may need to be considered when evaluating the role of plasma homocysteine as a risk factor in patients with obesity and type II diabetes.


Abstract: Acute myeloid leukemia (AML-M3) is associated with the translocation t(15;17)(q22;q12-21) which disrupts the retinoic acid receptor alpha (RARA) gene on chromosome 17 and the PML gene on chromosome 15. We report a two-year-old patient with AML-M3 without the usual translocation t(15;17). Cytogenetic studies demonstrated normal appearance of chromosome 15 while the abnormal 17 homologue
was apparently a derivative 17, der(17)(17qter-cen-q21:), the rearrangement distinctly shows deletion at 17q21 band and the morphology corresponding to an iso chromosome i(17q-). This case report is a rare cytogenetic presentation of acute promyelocytic leukemia (APML).


Abstract: This is a review paper for the literature addressing the subject of Ethics in Psychiatry. Beside the definition it discusses issues particular to the specialty of Psychiatry such as confidentiality, and doctor patient relationship which has a particular sensitivity in psychiatry because of the issues of transference and counter transference. The subject of informed consent and patients rights are sometimes compromised by compulsary admission to hospital against the patients wish, this also involves compromising their rights in the choice of medications and various modalities of treatments. The subject of code of ethics and making ethical clinical decisions in clinical daily work is also discussed. Ethics is defined as the underlying principle that infuses laws, social customs and codified rules of professional groups. At a practical level ethics seeks to determine which actions, relationships and policies ought to be considered right or wrong. Ethics is the study of the ultimate problems of human conduct and emanates from the members of the profession who exemplify that which is considered best in the practice. Morality in this context must rest upon the physician’s subjective and personal realization of what is the proper ethical approach to the physician’s practice. In fact, national commissions, review boards, hospital and research committees, are all expressions of the same goal: to bring together different opinions, expectations, forms of expertise, social interests, and to practice the art of deliberation and Confrontation in a tolerant and democratic spirit.

(H)


Abstract: Objectives: To determine the reference values of the fraction of exhaled nitric oxide FENO among healthy, non-smoking male adults and its correlation with age, height, weight, and body mass index (BMI). Methods: This cross-sectional study was conducted at the Departments of Physiology and Medicine, College of Medicine and King Khalid University Hospital, King Saud University, Riyadh, from September 2007 to August 2008 on healthy non-atopic, non-smoking male Saudi subjects. The FENO was measured online using the single-breath technique according to recent guidelines of the American Thoracic Society (ATS). Results: We studied 121 subjects with a mean age 31.00±12.24 years, BMI of 27.23±6.64, and FEV1/FVC 85% (81–92%). The FENO ranged between 7.66 parts per billion (ppb) and 46.6ppb (mean 22.79±8.13), with >84% of subjects recording levels <30ppb and >95% with levels <40ppb. The FENO negatively correlated with body weight (r=0.3888, p=0.001) and BMI (r=0.238, p=0.009). No correlation was observed between FENO, FEV1/FVC ratio, age, and height. Conclusion: The reference values of FENO for nonsmoking, non-atopic male Saudi adults fall between 7.66 and 46.6ppb (mean 22.79±8.13), similar to other populations. The FENO negatively correlates with body weight and BMI.

Abstract: Endothelium-derived nitric oxide (NO) is a key molecule in regulation of vascular tone and its association with vascular disease has long been recognized. NO inhibits many processes known to be involved in the formation of atherosclerotic plaque, including monocyte adhesion, platelet aggregation and vascular smooth muscle cell proliferation. Another important role of endothelial NO is the protection of the vascular wall from the oxidative stress induced by its own metabolic products and by the oxidation products of lipids and lipoproteins. Endothelial dysfunction, occurs at very early stages of atherosclerosis. It is therefore possible that deficiency in local NO availability could be a final common pathway that accelerates atherogenesis in humans. In addition to its role in the vascular endothelium, NO availability has been shown to modulate metabolism of lipoproteins. Negative correlation has been reported between plasma concentrations of NO metabolic products and plasma total and Low Density Lipoprotein [LDL] cholesterol levels while High Density Lipoprotein [HDL] improves vascular function in hypercholesterolaemic subjects. The loss of NO has considerable effect on the development of the disease. In the early stages of the disease reduced NO would leave the endothelium vulnerable to increased leukocyte diapedesis and increase the possibility of LDL oxidation. Oxidative stress and endothelial dysfunction are major contributors to development and progression of atherosclerosis in Diabetes Mellitus. Moreover, reports show that diabetics have impaired lung functions. It has been proposed that insulin resistance leads to airway inflammation. Exhaled nitric oxide (ExNO) is a recently introduced non invasive marker to measure inflammation and oxidative stress in the lung. So far no work has been done on exhaled NO levels in patients with DM. There are also no studies correlating exhaled NO to blood NO levels. We are also aiming to see if there is any relationship between exhaled NO with serum NO levels in diabetics as well as healthy individuals.


Abstract: The gene frequencies of HLA class I and class II alleles were investigated in 95 healthy Tunisian individuals from Gabes. Our aim was to compare the genetic relationship between Gabesians and Mediterraneans and sub-Saharan Africans using genetic distances, Neighbour-Joining dendrograms, correspondence and haplotypes analysis, thereby providing additional information about evolutionary history of modern-day Tunisians. Subjects were unrelated and of both genders and HLA class I and class II genes were genotyped using the polymerase chain reaction-sequence specific primer (PCR-SSO) technique. Our data show that south-eastern Tunisians (Gabes area) are related to present-day North Africans (Algerians, Moroccans, Tunisians) and Iberians (Spaniards, Basques), and along with other North Africans, appear to be genetically related to Berbers, an indication that the Arab invasion (7th-11th centuries) of North Africa had minimal contribution on the HLA makeup of North Africans. On the other hand, Iberians including Spaniards and Basques show relatedness to (native Tunisian) Berbers, suggesting that the gene flow of 7th century AD invaders was also low in Iberians. In conclusion, the successive invasions of North Africa in general, and Tunisia in particular, did not modify markedly the genetic makeup of present-day Tunisians. With the exception of Greeks who have a sub-Saharan genetic
profile, all Mediterranean populations depict a typical Mediterranean substratum.


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Abstract: Background: The HLA polymorphism is a powerful genetic tool to study population origins. By analysing allele frequencies and haplotypes in different populations, it is possible to identify ethnic groups and establish the genetic relationships between them. Aim: The Berber (endogenous Tunisians) HLA class I and class II genotypes were analysed and compared with those of Mediterranean and Sub-Saharan African communities using genetic distances, Neighbour-Joining dendrograms, correspondence and haplotype analysis. Subjects and methods: One hundred and five unrelated Berbers were typed for HLA class I (A, B) and class II (DRB1, DQB1) gene alleles using reverse dot-blot hybridization. Results: High frequencies of A*0201 (24.76%), A*3402 (22.38%) and B*44 (32.85%) alleles were recorded for Berbers, the highest recorded for Mediterranean and North African populations. This study shows a close relatedness of Tunisian Berbers to other Tunisians, North Africans and Iberians. Conclusion: The apparent relatedness of Tunisian Berbers to present-day (North African) Tunisians, Algerians and Moroccans suggests that the Arab invasion of North Africa (7th-11th centuries AD) did not significantly impact the genetic makeup of North Africans. Furthermore, Tunisian Berbers appear to be closely related to Iberians (Spaniards and Basques), indicating that the 7th century AD gene flow of invaders was low in Iberians and that the main part of their genetic pool came after the Northward Saharan migration, when hyper-arid conditions were established in Sahara (before 6000 BC). Other studied populations belong to the old Mediterranean substratum, which has been present in the area since pre-Neolithic times. This study indicates a higher proportion of Iberian than Arab ancestry in Tunisian Berbers, which is of value in evaluating the evolutionary history of present-day Tunisians. Greeks seem to share genetic HLA features (Chr 6) with Sub-Saharan. The relatedness of Greeks to Sub-Saharan has been confirmed by other studies based on chromosome 7 genetic markers.


Abstract: Aims: The rapid economic transition in the Gulf Arab countries has resulted in marked changes in fertility and marriage patterns and a decrease in the number of children per family. Yet little is known about the determinants of family size in urban and less urban areas. Methods: A cross-sectional study was carried out on 450 Kuwaiti women aged 20-60 years who attended health care centres in Al Asima and Al Jahra governorates. A semi-structured questionnaire was administered through face-to-face interview which included variables on socio-demographic characteristics, family size, actual and ideal spacing, marriage related variables, health conditions and utilization of health services. Both univariate and multivariate analyses were performed to identify the factors that affect family size. Results: The socio-economic indicators were significantly better in Al Asima, the capital, than in Al Jahra, a less urbanized area. On average, family size for the total sample was 5.97 +/- 0.114 with a larger size (6.27 +/- 0.242) in Al Jahra than in Al Asima (5.80 +/- 0.118) but without a significant
difference. Al Jahra women reported a larger number of deliveries and past pregnancies but a lower usage of contraceptive measures. The total fertility rate was 3.65 in Al Asima, 3.84 in Al Jahra and 3.71 births per woman in the total population. Family size was inversely related to the educational level of women and their husbands. Currently employed women had a smaller family size (5.22 +/- 0.119) than the unemployed (6.81 +/- 0.187); p < 0.0005. Health problems in the interviewee or her husband played a minor role in the decision to have more children. Families where the husband was the decision-maker on the number of children had a significantly larger family size (6.91 +/- 0.451) than families where the couple both participated in the decision (5.83 +/- 0.129; p = 0.032). The duration of marriage, ideal number of children, age of women at last delivery, number of rooms and the crowding index had significant positive effects on family size, whereas age at first delivery, duration between two consecutive pregnancies and history of past abortions were inversely related to family size in the stepwise multiple regression analysis. Conclusions: Although women in the less urbanized areas in the Gulf Arab populations are more disadvantaged with respect to socio-economic characteristics than women in the more urbanized areas, there were no significant differences in family size in these contrasting communities. The impact of socio-demographic characteristics on family size was minor compared to factors related to fertility and the husband's desire to have more children. Fertility and family planning policies should consider these issues in order to promote more effective programmes.

[Abstract]

Background: The Gulf Cooperation Council (GCC) countries have witnessed over the last 40 years a rapid and major social, cultural, and economic transformation. The development of medical education in the region is relatively new, dating from the late 1960s. An important goal among the medical colleges in the region is to graduate national physicians who can populate the healthcare service of each country. Aim: The aim of this study is to provide understanding of undergraduate medical education in each of the six GCC countries and the challenges that each face. Methods: This is a descriptive cross-sectional study. Fourteen senior medical faculty were requested to submit information about undergraduate medical education in their own countries, focusing on its historical Background, student selection, curriculum, faculty, and challenges. Results: The information provided was about 27 medical colleges: 16 from the Kingdom of Saudi Arabia (KSA), five from the United Arab Emirates (UAE), two from the Kingdom of Bahrain, two from Sultanate of Oman, one from Kuwait, and one from the State of Qatar. It was found that older colleges are reviewing their curriculum while new colleges are developing their programs following current trends in medical education, particularly problem-based learning and integrated curricula. The programs as described ‘on paper’ look good but what needs to be evaluated is the curriculum ‘in action’. Faculty development in medical education is taking place in most of the region's medical colleges. Conclusion: The challenges reported were mainly related to shortages of faculty, availability of clinical training facilities and the need to more integration with the National Health Care services. Attention to quality, standards, and accreditation is considered essential by all colleges.

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Abstract: Background: The Gulf Cooperation Council (GCC) countries have witnessed over the last 40 years a rapid and major social, cultural, and economic transformation. The development of medical education in the region is relatively new, dating from the late 1960s. An important goal among the medical colleges in the region is to graduate national physicians who can populate the healthcare service of each country. Aim: The aim of this study is to provide understanding of undergraduate medical education in each of the six GCC countries and the challenges that each face. Methods: This is a descriptive cross-sectional study. Fourteen senior medical faculty were requested to submit information about undergraduate medical education in their own countries, focusing on its historical Background, student selection, curriculum, faculty, and challenges. Results: The information provided was about 27 medical colleges: 16 from the Kingdom of Saudi Arabia (KSA), five from the United Arab Emirates, two from the Kingdom of Bahrain, two from Sultanate of Oman, one from Kuwait and one from the State of Qatar. It was found that older colleges are reviewing their curriculum while new colleges are developing their programs following current trends in medical education particularly problem-based learning and integrated curricula. The programs as described ‘on paper’ look good but what needs to be evaluated is the curriculum ‘in action’. Faculty development in medical education is taking place in most of the region’s medical colleges. Conclusion: The challenges reported were mainly related to shortages of faculty, availability of clinical training facilities, and the need to more integration with the National Health Care services. Attention to quality, standards, and accreditation is considered essential by all colleges.


Available at: http://www.pps.org.pk/PJP/4-1/Hafeez.pdf

Abstract: Background: This study was carried out to find usefulness of pulse oximetry in assessment of dyspnoea patients with asthma. Methods: This study was carried out at Baqai Medical University Teaching Hospital. Fifty-three patients, 28 males and 25 females, suffering from asthma with age ranging between 16 to 70 years were included. They were subjected to Pulse Oximetry before and after the bronchodilator treatment when presented with acute dyspnoea. Simultaneous recording of spirometry was also done. Results: Mean oxygen saturation (SaO2) increased from 93.11±4.33 to 95.17±3.59 percent (p<0.0001) as dyspnoea improved after bronchodilator treatment. Mean FVC increased from 1.81±0.84 to 2.21±0.92 L (p<0.01). Mean FEV1 increased from 1.21±0.73 to 1.62±0.85 L (p<0.01). Mean PEFR increased from 1.67±1.07 to 2.31±1.28 L/min (p<0.0001). Mean percentage ratio (FEV1/FVC) increased from 66.47±18.01 to 71.19±16.47 percent (p<0.0001). The correlation was found between SaO2 and FEV1, FVC and PEFR with R2=0.1149, R2=0.2487 and R2=0.3193 respectively. Conclusion: Pulse Oximetry like spirometry is reliable for assessment of dyspnoea. Both are correlated. Pulse oximetry has value in assessment of dyspnoea in asthma.


Available at: http://www.pjcm.net/2007_3.php
Abstract: Objective: To assess Modified Borg Scale (MBS) for subjective rating of dyspnoea in patients with chronic obstructive pulmonary diseases (COPD) and asthma and to find correlation between MBS and spirometry. Background: Measurement of dyspnoea in acute asthma is difficult. Rating of dyspnoea by subjective assessment and objective parameters becomes difficult when patient is in respiratory distress. Modified Borg Scale, a vertical subjective rating scale was tested to see whether it provides an alternative, flexible and easy means of assessment of dyspnoea as perceived by patients. Methodology: 53 patients between 16-70 years, 25 females with mean age 46.24±5.56 and 28 males with mean age 39.5±5.43 suffering from COPD and asthma who presented with dyspnoea were included in the study. They were asked to mark the MBS prior to and after the bronchodilators administration. Simultaneous recording of spirometry was also done. Results: The mean MBS decreased from 3.39±1.87 to 1.51±1.27 (p<0.01). The mean Forced vital capacity (FVC) increased from 1.81±0.84 to 2.21±0.92 L/min (p<0.01) after the treatment. The mean Forced expiratory volume in first second (FEV1) increased from 1.21±0.73 to 1.62±0.85 L/min (p<0.01) after the treatment. The mean Peak expiratory flow (PEF) increased from 1.67±1.07 to 2.37±1.28 L/min (p<0.01). The mean Percentage ratio (FEV1/FVC) increased from 66.47±18.01 to 71.19±16.47 (p<0.01). As the spirometry improved, the perception decreased showing inverse relationship with MBS. The regression analysis showed R²=−0.3418, R²=−0.2407 and R²=−0.4025 respectively for the above parameters. Conclusion: Modified Borg Scale is a reliable and valid tool for perception of dyspnoea and can be used for subjective assessment of shortness of breath. It correlates with spirometry.


Abstract: Background: Schizophrenia has a high rate of relapse. Treatment compliance is challenging in the long-term management of schizophrenia. The outcomes of previous studies on Community Psychiatry Service – Home Visit Treatment (CPS-HVT) are inconclusive. Aims: To evaluate the effectiveness of CPS-HVT in (a) reducing the number of admissions and (b) duration of admissions of chronic schizophrenic patients. Methods: A retrospective analysis by auditing files of all cases of adult schizophrenic patients in Bahrain who underwent CPS-HVT treatment. A total of 10 years follow-up (5 years of outpatient treatment before the referral to the community service and 5 years follow-up in the community service after the referral) was carried out. The number of admissions and the duration of admissions were compared. Results: Of the total number of 232 patients 51 (22%) fulfilled the inclusion criteria. The sum total of 77 admissions during 5 years before the referral to the CPS-HVT was 2577 days (50.5 d/patient). After the referral to the CPS-HVT the sum total of 48 admissions was 1383 days (27.1 d/patient), and no patient had more than 3 admissions. The number of non-hospitalized patients doubled during the 5 years follow-up in the CPS-HVT (n=13; 4 males vs. n=27; 10 males). The proportion of males was 47.1% (n=24). Conclusions: CPS-HVT is effective and superior to standard outpatient treatment of chronic schizophrenic patients in reducing the number and duration of admissions, in Bahrain. Future studies should evaluate a wide range of other outcomes, including the cost effectiveness of CPS-HVT. Considering the massive impact of community-based care on patients, caregivers, clinicians and the community at large, such studies are urgently needed.
Available at: http://www.arabjpsychiat.com/index.php?option=com_content&view=category&id=1&Itemid=2

Abstract: Background: The definition, prevalence, etiology and clinical significance of lithium-associated subclinical hypothyroidism are uncertain. Aim: To determine the prevalence of and risk factors for subclinical hypothyroidism among Bahraini patients on long-term lithium therapy.
Methods: A retrospective study was conducted in all patients attending the outpatient clinic at the Bahrain Psychiatric Hospital who were diagnosed according to ICD-10 criteria as bipolar affective disorder, schizoaffective disorder or resistant depression, and were receiving maintenance lithium therapy for one year or longer. The age, gender, dosage of lithium, duration of lithium therapy, and duration of therapy until the development of thyroid dysfunction if it occurred, were the variables analyzed. Thyroid stimulating hormone (TSH; reference range 0.25 – 4.5 mU/L) and free thyroxine (T4; reference range 6.0 – 24.5 pmol/L) in serum were measured.
Results: In a sample of 32 patients 12 were female and 20 were male with a mean (± SD) age 40.41 ± 9.13 years. The age at onset of illness was 22.78 ± 7.4 years, and lithium therapy was initiated at the age of 30.53 ± 8.85 years. The dosage of lithium (mean ± SD) was 812.5 ± 282.6 mgs/day administered for a duration of 10.72 ± 7.02 years. The level of TSH and thyroxine (mean ± SD) were 3.45 ± 3.1 mU/L and 15.5 ± 3.14 pmol/L, respectively. Seven patients (21.9%) were considered to have had a subclinical hypothyroidism judged by a TSH level of > 4.5 mU/L; of these four were females. None of the patients had overt hypothyroidism or hyperthyroidism.
Conclusion: Subclinical hypothyroidism is a relatively common adverse effect associated with lithium maintenance therapy. The duration of lithium therapy and female gender are important predictive factors. It is important to screen patients on lithium therapy for thyroid dysfunction for early detection and management.

Available at: http://www.diabetesresearchclinicalpractice.com/article/S0168-8227(11)00401-3/abstract

Abstract: Objective: To test the feasibility of short message service (SMS) usage between the clinic visits and to evaluate its effect on glycemic control in uncontrolled type 2 Diabetes Mellitus (DM) subjects. Research design and methods: 34 cases with type 2 Diabetes were followed after fulfilling the inclusion criteria. The interventional group (n = 12) had the same conventional approach of the control group but had two mobile numbers (physician and diabetic educator) provided for the SMS support until their next visit in 3 months. Both groups of age, BMI and the pre-study A1c were comparable. Results: Both groups had a significant reduction in their A1c compared to their baseline visit. However, the interventional group had significantly greater reduction in A1c (p = 0.001), 1.16% lower than controls. The service was highly
satisfactory to the group. Conclusion: The results indicate effectiveness in lowering A1c and acceptance by the patients. Further research and large-scale studies are needed.


Abstract: Livedoid vasculopathy (LV) is an occlusive thrombotic disease of lower extremities. A 34-year-old woman presented with 4-year history of recurrent necrotic and painful lesions with violaceous and purpuric border on both legs. Initial treatment with hydroxychloroquine, dapsone and prednisone were unsuccessful. Skin biopsy showed inflammatory infiltrate with epidermal necrosis. Prothrombin G20210A and factor V-Leiden heterozygosity, and MTHFR C677T homozygosity with hyperhomocysteinemia were confirmed. LV diagnosis was made; acetylsalicylic acid, folic acid, vitamin B12, and prednisone treatment resulted in complete healing. This is the first report on coexistence of prothrombin G20210A, factor V-Leiden, and homozygous MTHFR C677T with hyperhomocysteinemia in LV.


Abstract: Despite many intervention programmes aimed at curtailing the scourge, malaria remains a formidable problem of human health. Immunity to asexual blood-stage of Plasmodium falciparum malaria is thought to be associated with protective antibodies of certain immunoglobulin classes and subclasses. We have analysed immunoglobulin G profiles to six leading blood-stage antigens in relation to clinical malaria outcome in a hospital-based study in Sudan. Our results revealed a linear association with anti-AMA-1-IgG1 antibodies in children <5 years and reduced risk of severe malaria, while the responses of the IgG3 antibodies against MSP-2, MSP-3, GLURP in individuals above 5 years were bi-modal. A dominance of IgG3 antibodies in >5 years was also observed. In the final combined model, the highest levels of IgG1 antibodies to AMA-1, GLURP-R0, and the highest levels of IgG3 antibodies to 3D7 MSP-2 were independently associated with protection from clinical malaria. The study provides further support for the potential importance of the studied merozoite vaccine candidate antigens as targets for parasite neutralizing antibody responses of the IgG1 and IgG3 subclasses.

Abstract: This nationwide study was conducted to assess the extent of adherence of primary-care physicians to the World Health Organization (WHO)-recommended guidelines on the use of oral rehydration therapy (ORT), antimicrobials, and prescribing of other drugs used in treating symptoms of acute diarrhoea in Bahrain. A questionnaire-based, cross-sectional survey was carried out in primary-care health centres. During a six-week survey period (15 August-30 September 2003), 328 (25.2%) completed questionnaires were returned from 17 of 20 health centres. In a sample of 300 patients, oral rehydration salts (ORS) solution was prescribed to 89.3% (n=268) patients; 12.3% received ORS alone, whereas 77% received ORS in combination with symptomatic drugs. Antimicrobials were prescribed to 2% of the patients. In 11.4% of the cases, rehydration fluids and other drugs were given parenterally. The mean number of drugs was 2.2±0.87 per prescription. In approximately one-third of the patients, three or more drugs were used. Primary-care physicians almost always adhered to the WHO guidelines with respect to ORT and antimicrobials. However, in several instances, ORT was prescribed along with polypharmacy, including irrational use of drugs for symptomatic relief. Effective health policies are needed to reduce the unnecessary burden on the healthcare system.


discourage others from practicing self-medication (58.7% versus 40.4%, p = 0.04). They had a more confident attitude (54.3% versus 35.1%, p = 0.03) and a smaller number of them would seek a prescription (34.8% versus 54.3%, p = 0.03). They practiced self-medication more often (73.3% versus 52.6%, p = 0.02) and more appropriately (58.7% versus 35.8%, p = 0.02). Conclusion: This cross-sectional study shows that senior medical students tend to have greater knowledge of appropriate self-medication, have a more confident as well as concerned attitude towards self-medication, and tend to practice self-medication more often and appropriately.


Abstract: Objectives: To assess the attitudes of Bahraini women aged 30-64 years towards the menopause and to examine the relationship between attitudes of Bahraini women towards menopause and their sociodemographic data and reproductive characteristics. Materials and methods: A cross-sectional study of 260 Bahraini women attending primary health care centers was conducted. A multistage stratified and clustered random sampling technique was used. The women were interviewed using a questionnaire composed of Attitude Towards Menopause scale and sociodemographics. Results: The mean+/−S.D. of women's age and age at menopause were 45.04+/−9.43 and 48.67+/−2.92 years, respectively. Respondents' median age and median age at menopause were 45.5 and 48.0 years, respectively. Almost half of the women (48.5%) had completed high school or diploma, and 41.5% were currently employed outside home. Over half of the women (53.5%) were premenopausal, 19.6% perimenopausal and 26.9% were postmenopausal. The Mean Average Attitude Score (MAAS)+/−S.D. was 2.4+/−0.26 where the minimum score is 1 indicating very negative attitudes and the maximum is 4 indicating very positive attitudes. Statistically significant differences in means were noted among categories of educational level, menopausal status, and marital status. Moreover, MAAS was positively correlated with age of respondents. Premenopausal women had more negative attitudes towards menopause than peri- or postmenopausal women. Conclusions: Bahraini women display a considerable range of attitudes towards the menopause, with their general attitudes ranging from neutral to positive. Postmenopausal women had more positive attitudes towards menopause than premenopausal women. Implications for health care policy were explored in this study.


Abstract: Objectives: To investigate the knowledge of Bahraini women aged 30-64 years about menopause, hormone therapy (HT) and their associated health risks. To examine the relationship between the knowledge of Bahraini women about menopause and their sociodemographic and reproductive characteristics. Design: A cross-sectional study was conducted of 260 Bahraini women attending primary health-care centers. A multistage, stratified and clustered random sampling technique was used. The women were interviewed using a structured questionnaire composed of the Menopause Knowledge Scale and sociodemographics. Results: The mean knowledge percentage of all participants was 59.86, with a standard deviation of 25.77. There were significant
differences in the mean knowledge percentages among categories of education (p = 0.025) and employment (p = 0.005). No significant differences in the mean knowledge percentages were found among categories of menopausal status. The statement with the highest percentage of correct answers was 'Pregnancy cannot occur after menopause' (75.8%). Statements regarding risk of cardiovascular diseases had the lowest percentage of correct answers, 'HT increases risk of cardiovascular diseases' (33.8%) and 'Risk of cardiovascular diseases increases with menopause' (40.0%). Conclusion: The knowledge of Bahraini women about menopause and HT is average. Lack of knowledge was greatest in areas related to heart disease. Better education about menopause needs to be achieved regarding the long-term risk associated with menopause and the pros and cons of HT.


Abstract: Structural variants (SVs) are common in the human genome. Because approximately half of the human genome consists of repetitive, transposable DNA sequences, it is plausible that these elements play an important role in generating SVs in humans. Sequencing of the diploid genome of one individual human (HuRef) affords us the opportunity to assess, for the first time, the impact of mobile elements on SVs in an individual in a thorough and unbiased fashion. In this study, we systematically evaluated more than 8000 SVs to identify mobile element-associated SVs as small as 100 bp and specific to the HuRef genome. Combining computational and experimental analyses, we identified and validated 706 mobile element insertion events (including Alu, L1, SVA elements, and nonclassical insertions), which added more than 305 kb of new DNA sequence to the HuRef genome compared with the Human Genome Project (HGP) reference sequence (hg18). We also identified 140 mobile element-associated deletions, which removed approximately 126 kb of sequence from the HuRef genome. Overall, approximately 10% of the HuRef-specific indels larger than 100 bp are caused by mobile element-associated events. More than one-third of the insertion/deletion events occurred in genic regions, and new Alu insertions occurred in exons of three human genes. Based on the number of insertions and the estimated time to the most recent common ancestor of HuRef and the HGP reference genome, we estimated the Alu, L1, and SVA retrotransposition rates to be one in 21 births, 212 births, and 916 births, respectively. This study presents the first comprehensive analysis of mobile element-related structural variants in the complete DNA sequence of an individual and demonstrates that mobile elements play an important role in generating inter-individual structural variation.

(K)


Abstract: In order to examine the direct acute effect of erythropoietin (EPO) perfusion on synaptic plasticity and transmitter release probability in hippocampal slices, one
Month old mice were decapitated and hippocampal slices were prepared. The effect of EPO perfusion (50U/ml) on the basic synaptic transmission of hippocampal slices was examined. In addition, paired-pulse facilitation (PPF with inter stimulus intervals ISI of 50, 100 and 200ms), long term potentiation (LTP) and depression (LTD) were recorded using high (HFS) and low (LFS) frequency stimulations. EPO-perfusion depressed significantly the slope of the fEPSP. The PPF ratio was increased significantly when compared with pre-EPO-perfusion. Stimulation of the control slices with LFS (1Hz) depressed significantly the slope of the fEPSP (77.7±3.85% of the baseline responses). Intermediate stimulation frequency (10Hz) produced no significant changes, while HFS (100Hz) induced significant potentiation of the responses (142.38±7.72%). In EPO-perfused slices significant bigger responses were obtained (1Hz, 101.12±5.69%, 10Hz, 123.24±2.68, and 100Hz, 216.41±20.1) when compared to the control slices. These results suggest that erythropoietin decreases the excitatory neurotransmitter release probability and may in this way protect the synapses from toxic levels of glutamate. Erythropoietin perfusion increased the expression of long-term potentiation in the hippocampus which is considered as basic cellular model for learning and memory.

Abstract: Chronic stress causes insensitivity to rewards (anhedonia) in rats, reflected by the absence of anticipatory behavior for a sucrose-reward, which can be reversed by antidepressant treatment or repeated announced transfer to an enriched cage. It was, however, not clear whether the highly rewarding properties of the enriched cage alone caused this reversal or whether the anticipation of this reward as such had an additional effect. Therefore, the present study compared the consequences of the announcement of a reward to the mere effect of a reward alone with respect to their efficacy to counteract the consequences of chronic stress. Two forms of synaptic plasticity, long-term potentiation and long-term depression were investigated in area CA1 of the hippocampus. This was done in socially stressed rats (induced by defeat and subsequent long-term individual housing), socially stressed rats that received a reward (short-term enriched housing) and socially stressed rats to which this reward was announced by means of a stimulus that was repeatedly paired to the reward. The results were compared to corresponding control rats. We show that announcement of enriched housing appeared to have had an additional effect compared to the enriched housing per se as indicated by a significant higher amount of LTP. In conclusion, announced short-term enriched housing has a high and long-lasting counteracting efficacy on stress-induced alterations of hippocampal synaptic plasticity. This information is important for counteracting the consequences of chronic stress in both human and captive rats.

Abstract: Exposure to acute as well as prolonged stress produces cognitive deficits.
Both long term potentiation (LTP) and depression (LTD) in the hippocampus are cellular basic mechanisms implicated in learning and memory. Male Wister rats were used in this study to evaluate the effect of stress on hippocampal synaptic plasticity in vivo. The CA1 area of the hippocampus was implanted with stimulating and recording electrodes. The field excitatory post synaptic responses (fEPSP) were recorded before and after induction of stress to the animals (unexpected 15 electrical shocks to the feet of the animals during 10 minutes/ twice daily for two days). Results showed that the base line synaptic transmission was increased in the stressed rats compared to the control. The induction of LTP (by 100 Hz trains of stimulation) was inhibited in the stressed animals. We concluded that this protocol of stress for two days affected significantly the hippocampal synaptic plasticity measured in vivo. This may explain the effect of stress on some aspects of hippocampus function like learning and memory.


Available at: http://informahealthcare.com/toc/mte/32/11

Abstract: Background: In the problem-based learning (PBL) medical curriculum at the Arabian Gulf University in Bahrain, students construct concept maps related to each case they study in PBL tutorials. Aim: To evaluate the interrater reliability and predictive validity of concept map scores using a structured assessment tool. Methods: We examined concept maps of the same cohort of students at the beginning (year 2) and end (year 4) of the pre-clerkship phase, where PBL is the main method of instruction. Concept maps were independently evaluated by five raters based on valid selection of concepts, hierarchical arrangement of concepts, integration, and relationship to the context of the problem, and degree of student creativity. A 5-point Likert scale was used to evaluate each criterion. Interrater reliability of the instrument was determined using the intraclass correlation coefficient (ICC) and predictive validity was measured by testing the correlations of concept map scores with summative examination scores. Results: The ICC of the concept map scores in year 2 was 0.75 (95% CI, 0.67-0.81) and in year 4 was 0.69 (95% CI, 0.59-0.77). Overall concept maps scores of year 4 students were significantly higher compared with year 2 students (p < 0.001, effect size = 0.5). The relationship between the students' scores in concept maps and their scores in summative examination varied from no to mild correlation. Conclusion: The interrater reliability of concept map scores in this study is good to excellent. However, further studies are required to test the generalizability and validity of assessment using this tool.


Available at: http://www.jidc.org/index.php/journal/article/download/19759493/64

Abstract: Background: To assess the prevalence of extended spectrum beta-lactamase (ESBL) producing Escherichia coli and Klebsiella strains in nosocomial and community-acquired infections.

Methodoloy: The study was conducted at a centralized microbiology laboratory in the Eastern Province of Saudi Arabia. Laboratory records (January 2004 -December 2005) were assessed. Associated resistance to a panel of antibiotics was determined.

Results: A total of 6,750 Gram-negative organisms were assessed for ESBL-phenotype. ESBL was detected in 6% (409/6,750) of isolates, the majority of which were E. coli (83%). ESBL producers were significantly higher among isolates from in-patients 15.4% (143/927) versus out-patients (4.5%; 266/5,823); p < 0.05. Old age (older than
60 years) represented a significant risk for having an ESBL-producing pathogen. Urine was the major source of ESBL isolates in in-patients (46.1%) and out-patients (74.4%). The proportion of urinary E. coli isolates which were ESBL producers was significantly higher among in-patients (53/506; 10.4%) compared to out-patients (182/4,074; 4.4%); p<0.05. Old age (older than 60 years) represented a significant risk for having an ESBL-producing pathogen. Urine was the major source of ESBL isolates in in-patients (46.1%) and out-patients (74.4%). The proportion of urinary E. coli isolates which were ESBL producers was significantly higher among in-patients (53/506; 10.4%) compared to out-patients (182/4,074; 4.4%); p<0.05. Among in-patients, 60% of the ESBL associated infections were nosocomial. All were sensitive to imipenem but high levels of resistance to gentamicin, amikacin, amoxicillin-clavulanic acid and ciprofloxacin was shown.

Conclusion: The findings document evidence of the spread of multi-resistant ESBL-producers into the community. This has significant implications for patient management, and indicates the need for increased surveillance and molecular characterization of these isolates.


Abstract: Aim of work: The present study deals with the teratogenic effects which occur in albino rat fetuses after intragastric administration of different doses of dimethoate and carbosulfan insecticides, either separately or in combination, to pregnant albino rats. Materials and methods: In this study, fifty female albino rats were allocated to ten groups (5/each group); control, low dose dimethoate 1/40 LD50 (8.25 mg/kg), medium dose dimethoate 1/20 LD50 (16.5 mg/kg), high dose dimethoate 1/10 LD50 (33 mg/kg), low dose carbosulfan 1/40 LD50 (5.2 mg/kg), medium dose carbosulfan 1/20 LD50 (10.45 mg/kg), high dose carbosulfan 1/40 LD 50 (20.9 mg/kg), mixed low doses of dimethoate and carbosulfan, mixed medium doses of dimethoate and carbosulfan, and mixed high doses of dimethoate and carbosulfan. All pregnant females in mixed medium doses of dimethoate and carbosulfan group died between 9th and 11th day of gestation, while those in mixed high doses of dimethoate and carbosulfan died between 8th and 10th day of gestation. Animals of all groups were sacrificed in the morning of 20th day of gestation. The external manifestation of poisoning with dimethoate and carbosulfan, embryolethality, live and dead fetuses, placental weight, external abnormalities of fetuses, fetal weight, crown-rump length, biparietal diameter had been monitored. Results: The results of the present study denoting that both dimethoate and carbosulfan insecticides, had a deleterious effects on embryolethality in the form of, increased percentage of preimplantation loss, an increased percentage of resorptions, and decreased percentage of live fetus. Also, both dimethoate and carbosulfan insecticides had a deleterious effects on fetal growth in the form of reduction of, fetal weight, crown-rumplength, and biparietal diameter. Conclusion: It is concluded that dimethoate and carbosulfan insecticides had a deleterious effects on fetal growth and embryolethality, this effect is dose-related, and that the mixture of low doses had an effect near that of medium and sometimes high dose of dimethoate and carbosulfan insecticides.

Magdy MO, Abdel-Rahman GM, Youssef HAH, Fadel RAR, Heider El HA. Craniofacial
ossification in rat fetuses following prenatal exposure to dimethoate and carbosulfan insecticides. Suez Canal University Medical Journal 2007; 10(1): 29-34.

Abstract: Introduction: Pesticides, including insecticides, occupy a unique position among many chemicals that man encounters daily for the purpose of pest control in all agricultural programs. In fact, most of such chemicals are not highly selective and constitute potential hazard to many non-target species including man and other animals. Aim of work: The present study aimed to study the teratogenic effects of both dimethoate and carbosulfan insecticides on the ossification of craniofacial bones in albino rat fetuses. Materials and methods: In this study, fifty female albino rats were allocated to ten groups (5/each group); control; low dose dimethoate 1/40 LD 50 (8.25 mg/kg), medium dose dimethoate 1/20 LD50 (16.5mg/kg), high dose dimethoate 1/10LD50 (33mg/kg), low dose carbosulfan 1/40 LD50 (5.2 mg/kg), medium dose carbosulfan 1/20 LD50 (10.45 mg/kg), high dose carbosulfan 1/40 LD50 (20.9 mg/kg), mixed low doses of dimethoate and carbosulfan, mixed medium doses of dimethoate and carbosulfan, and mixed high doses of dimethoate and carbosulfan. Animals of all groups were sacrificed in the morning of 20\textsuperscript{th} day of gestation. Then all specimens were stained with alizarin red stain for evaluation of ossification of skeletal system. Results: The results of the present study revealed that both dimethoate and carbosulfan insecticides, had a deleterious effect on the ossification of craniofacial bones and that the most affected bones were supraoccipital, presphenoid, and inerparietal bones. These effects were marked in the high doses and mixed low dose groups. Conclusion: It is concluded that the deleterious effects were increased with the increasing dose of either dimethoate or carbosulfan insecticides and that the mixture of low doses had an effect near to that of medium and sometimes high doses.


Available at: http://www.ncbi.nlm.nih.gov/pubmed/?term=Depression%2C+Anxiety%2C+and+Stress+Comorbidities+in+Sickle+Cell+Anemia+Patients+with+Vaso+occlusive+Crisis

Abstract: We investigated the association of sickle cell anemia (SCA) vaso-occlusive crisis (VOC) with depression, anxiety, and stress disorders among Bahraini patients and controls. This was a cross-sectional study that involved administering Depression Anxiety Stress Scales (DASS-21) consisting of structured depression, anxiety, and stress scales to SCA patients with (n=138) and without (n=105) VOC. Multinomial regression and correlation analysis were used in assessing the association of VOC with depression and/or anxiety and/or stress, after adjusting for other covariates. Significantly higher proportion of VOC patients was found among the severe-extremely severe anxiety (P<0.002) and stress (P=0.001) groups; the frequency of depressed patients was comparable between the 2 groups. Adjusting for age, sex, income, number of affected individuals per family, and HbS levels, mild-moderate (P=0.042; odds ratio=2.00; 95% confidence interval=1.03-3.91) and severe-extremely severe (P=0.004; odds ratio=4.43; 95% confidence interval=1.59-12.34) anxiety were independently associated with VOC. Both depression and stress were not associated with VOC after adjusting for these covariates. These results suggest a positive contribution of VOC to the increased rates of anxiety disorders among SCA patients, thereby recommending counseling SCA patients with repeated VOC for these psychologic comorbidities, in particular anxiety.
Available at: http://www.ncbi.nlm.nih.gov/pubmed/?term=HLA+DRB1*130101-DQB1*060101+haplotype+is+associated+with+acute+chest+syndrome+in+sickle+cell+anemia+patients.

Abstract: We investigated the association of human leukocyte antigens (HLA) class II alleles and haplotypes with the pathogenesis of acute chest syndrome (ACS) in 186 sickle cell anemia (SCA) patients, of whom 58 had documented ACS (new pulmonary infiltrate, fever, and other associated clinical events) and 128 with a negative history of ACS, serving as controls. HLA DRB1* and -DQB1* genotyping was performed by polymerase chain reaction-sequence-specific priming. Of the DRB1* and DQB1* alleles analyzed, only DRB1*130101 (Pc < 0.001) was positively associated with ACS. DRB1*130101-DQB1*060101 haplotype was more prevalent among ACS patients (P = 0.018), thus conferring disease susceptibility. Specific HLA alleles and haplotypes may influence ACS risk in SCA patients, and specific HLA genotypes may be useful markers for identifying high-risk SCA ACS patients.


Abstract: We investigated the association of HLA class II alleles and haplotypes with sickle cell anemia (SCA) vaso-occlusive crisis (VOC). DRB1*100101 was positively, while DRB1*140101, DRB1*150101, and DQB1*060101 were negatively associated with VOC. Both susceptible (DRB1*100101-DQB1*050101), and protective (DRB1*110101-DQB1*030101, DRB1*150101-DQB1*060101) haplotypes were identified, indicating HLA class II haplotypes influence VOC risk.

Available at: http://www.sciencedirect.com/science/article/pii/S0346251X09001055

Abstract: Skilled readers are often characterized as more metacognitively aware than less skilled readers. This questionnaire study of 160 students at a medical university in Bahrain compared reported academic reading strategy use of readers at varying initial English proficiency level and year of study. While all students reported high use of strategies overall, significant differences were found in reported use of metacognitive strategies in general and specific strategies related to translating from English to Arabic. Students of low initial English proficiency and those in their first year reported translating more, while upper year students translated less and used more metacognitive strategies. Compared to findings in previous studies using the same self-report questionnaire, reported reading strategy use was generally higher and more similar to other academic readers in an EFL setting than L1 and L2 readers in a US college. Differences in strategies related to translating suggest an area for further investigation.

Available at: http://sisaljournal.org/archives/jun11/malcolm/
Abstract: The English Unit self-access centre (SAC) at Arabian Gulf University, Bahrain, has been an important part of our English for medical purposes programme for first year students for over 12 years. During that time, efforts have been made to involve these students in contributing to the SAC in order to augment their experience of learning English, personalize the facility and increase their responsibility for out-of-class English learning within the institutional setting. This article describes an initiative to elicit student contributions to the SAC, as well as evaluating how successful it was in achieving these aims. The article concludes with a recommendation to those directing similar small scale self-access centres to encourage student participation and involvement in all aspects of their running, without imposing pre-selected ideas and practices for autonomous learning that may not accord with the perceived needs and wishes of the SAC users themselves.


Available at: http://www.aucegypt.edu/huss/eli/TESOL/issues/Documents/Special%20Edition%20of%20AUC%20TESOL%20Journal%20Fall%202011.pdf

Abstract: This article describes the use and evolution of self-directed projects as an adjunct to classroom learning in the context of a first year English program at a medical college in Bahrain. For the past decade, each semester students in the program have been required to design, carry out and hand in a self-directed project focused on improving their language skills. I describe how these projects are introduced, selected, managed and assessed, with examples and input from students’ reflective evaluation of their project work. Finally, I discuss the benefits and drawbacks to this initiative for teachers wishing to encourage students’ autonomous language learning.


Abstract: This study was conducted to determine the trends in Campylobacter antibiotic resistance occurring in our setting and to assess the differences in the isolates using patterns of plasmid profiles. One hundred Campylobacter jejuni strains of human and poultry origin isolated in 2002-2003 (phase A) and 2005-2006 (phase B) in the Kingdom of Bahrain were evaluated. Susceptibility to erythromycin, ciprofloxacin and tetracycline was determined, and plasmid extraction and polymerase chain reaction detection of the tet(O) gene was carried out. A single erythromycin-resistant isolate was identified, in sharp contrast to the high ciprofloxacin resistance which also showed an increment in phase B. Tetracycline resistance was higher in chicken (80.9%) compared to human (41.3%) isolates (P<0.01). Most isolates harbored two plasmids (23 kb and 35 kb) with significant correlation between tetracycline resistance and plasmid carriage in chicken isolates. The findings show continued effectiveness of erythromycin for campylobacteriosis but an increasing trend of high ciprofloxacin and tetracycline resistance. Tetracycline resistance is most likely due to the transfer of plasmids carrying the tet(O) gene between isolates.

Available at: http://www.jbc.org/content/283/48/33428.long

Abstract: Reversible phosphorylation of proteins regulates numerous aspects of cell function, and abnormal phosphorylation is causal in many diseases. Pyruvate dehydrogenase complex (PDC) is central to the regulation of glucose homeostasis. PDC exists in a dynamic equilibrium between de-phospho-(active) and phosphorylated (inactive) forms controlled by pyruvate dehydrogenase phosphatases (PDP1,2) and pyruvate dehydrogenase kinases (PDK1-4). In contrast to the reciprocal regulation of the phospho-/de-phospho cycle of PDC and at the level of expression of the isoforms of PDK and PDP regulated by hormones and diet, there is scant evidence for regulatory factors acting in vivo as reciprocal "on-off" switches. Here we show that the putative insulin mediator inositol phosphoglycan P-type (IPG-P) has a sigmoidal inhibitory action on PDK in addition to its known linear stimulation of PDP. Thus, at critical levels of IPG-P, this sigmoidal/linear model markedly enhances the switchover from the inactive to the active form of PDC, a "push-pull" system that, combined with the developmental and hormonal control of IPG-P, indicates their powerful regulatory function. The release of IPGs from cell membranes by insulin is significant in relation to diabetes. The chelation of IPGs with Mn2+ and Zn2+ suggests a role as "catalytic chelators" coordinating the traffic of metal ions in cells. Synthetic inositol hexosamine analogues are shown here to have a similar linear/sigmoidal reciprocal action on PDC exerting push-pull effects, suggesting their potential for treatment of metabolic disorders, including diabetes.


Abstract: Objectives: Insofar as recurrent spontaneous miscarriage (RSM) is linked with dysregulated immunity and inflammatory changes, and given the pro-inflammatory role of interleukin-21 (IL-21), we examined the association between IL-21 polymorphisms and RSM. Methods and Results: IL-21 rs2055979, rs13143866, rs9992580, and rs4833837 were genotyped in 235 cases of RSM and 235 controls. Regression analysis was employed in assessing the contribution of IL-21 variants to the overall RSM risk. Higher minor allele and genotype frequencies of rs2055979 and rs13143866, but not rs9992580 or rs4833837, were seen in RSM patients than in the controls. IL-21 haplotype [rs9992580/rs4833837/rs2055979/rs13143866] analysis revealed a lower frequency of the TGCG haplotype, and a higher frequency of the GGC GG and GAAA haplotypes in patients, thus conferring protection from or a susceptibility to RSM by these haplotypes respectively. Regression analysis confirmed the association of TGCG [OR (95%CI) =0.09 (0.05-0.16)], and GGC [OR (95%CI) =2.52 (1.34-4.54)] and GAAA [OR (95%CI)=4.02 (2.20-7.70)] haplotypes, after adjusting for age and BMI. Conclusions: Our findings indicate that IL-21 is a novel susceptibility gene for RSM.

Abstract: At the commencement of this century human suffering has been very high as the result of “natural” and man-made catastrophes. The latter occurred by meddling with Mother nature. This is very evident in the amount of pollution as the result of greenhouse emissions. We have been told not to monkey with Mother Nature, otherwise she will pay you in kind. Thus the natural disasters. Environmental science is a contentious and intensely politicized field. The political and the scientific debates about causality of greenhouse emissions and global warming has been rife for decades and these debates resulted in accords, signing only or signing and ratifying these accords by various nations. Nations that are mostly responsible for the pollution, unfortunately, did not commit themselves to cut down on the pollutants under the pretext that they cannot afford economical loses. What is the state of the art of the debates about green-house emissions and the repurcations on quality of life on our globe? On February 16, 2005 when Kyoto protocol went into effect in Kyoto, Japan, 141 countries had ratified it, including every major industrialized country – except the United States, Australia and Monaco. As of November 2009, 187 states had signed and ratified the protocol. USA is responsible for about a quarter of the greenhouse emissions that have been blamed for global warming, yet has not signed the accord. Two of the world’s fastes growing polluters- India and China-have signed on, but because they are considered developing countries, with other serious problems to overcome, they have been given a pass on the first Kyoto accord round and do not have to begin making emissions cuts until after 2012.

Mohammad AM. Medical ethics and professionalism: whose responsibility? a point of view. doctors who get sick have uniquely been on both sides of the stethoscope and possess unique double lenses. J Bahrain Med Soc 2009; 21(2): 239.


Abstract: In view of evidence linking sickle cell anemia (SCA) with chronic inflammation, and given the role of high sensitivity C-reactive protein (hs-CRP) as inflammatory mediator, we hypothesized that SCA vasoocclusive crisis (VOC) is associated with heightened hs-CRP levels. Study subjects comprised 104 SCA patients who experienced VOC event during the study period (VOC group), and 40 SCA patients who did not develop VOC for at least 9 months prior to blood collection (Steady-state group). hs-CRP determination was done by latex-enhanced nephelometry. Higher hs-CRP levels were seen in VOC [median (range)=31.3(1.14-363.0)] than steady-state [median (range)=5(0.16-185.0)] groups (P<0.001), with enrichment in high hs-CRP percentiles in VOC cases, which translated into step-wise increased VOC risk. Receiver-operating characteristic (ROC) analysis was employed in assessing the usefulness of hs-CRP as predictor of the frequency and severity of VOC. Spearman's correlation coefficient between hs-CRP and VOC was 0.65 (P<0.001) among unselected patients (0.71 in males and 0.59 in females). hs-CRP area under ROC curves was 0.90 (95% CI=0.85-0.94) among unselected patients, 0.94 (95% CI=0.89-0.98) for males, and 0.85 (95% CI=0.77-0.93) for females. Logistic regression analysis confirmed the positive association of increased hs-CRP levels with
VOC, which correlated positively with VOC frequency (P<0.001), type (P<0.001), pain (P<0.001), and need for hospitalization (P=0.024). These data support strong association of increased hs-CRP levels with VOC, which impacts VOC-related parameters, and support a role for hs-CRP in VOC follow-up.


Abstract: The peroxisome proliferator-activated receptor-gamma (PPARgamma) is a nuclear receptor involved in lipid metabolism, adipocyte differentiation and regulation of insulin sensitivity, and is associated with Type 2 diabetes (T2DM). The association of the C1431T silent mutation and the Pro12Ala missense transversion within the PPARgamma gene with the development of T2DM or obesity has often yielded contradictory results. We examined the association of the PPARgamma Pro12Ala and C1431T gene variants and their haplotypes with the susceptibility to T2DM. This was a retrospective study involving 491 T2DM patients and 400 age- and gender-matched controls. Pro12Ala and C1431T genotyping was done by PCR-RFLP analysis. Comparable frequencies of the mutant 12Ala (0.07 vs 0.08, p=0.216) and 1431T (0.12 vs 0.10, p=0.189) alleles, and Pro12Ala (p=0.218) and C1431T (p=0.421) genotypes were seen between patients and in nondiabetic control subjects. While no difference was noted in the distribution of Pro12Ala-C1431T haplotypes and genotypes between patients and controls, the PPARgamma 12Ala, but not 1431T, allele was significantly associated with lower body mass index (BMI) (< or =25.0) among patients. Regression analysis confirmed the association of the Pro12Ala (odds ratio =5.340; 95% confidence interval =1.044-27.311) with normal (BMI<25.0) but not with overweight/obesity among T2DM patients. Despite its association with lower BMI among T2DM patients, the PPARgamma gene does not appear to markedly influence Type 2 diabetes among Tunisian subjects.


Abstract: Objectives: The present work explored gene expression and spontaneous induction of the inflammatory cytokine interleukin-18 (IL-18) in atherosclerotic patients. In addition, the effect of the chlamydial antigen heat shock protein 60 (HSP60) and lipopolysaccharide (LPS) on the induction of this mediator was examined. Subjects and methods: Detection of IL-18 mRNA and protein level were assessed by in situ hybridization and immunohistochemistry, respectively, in 15 patients with coronary artery disease undergoing angiograms and 15 matching controls. Results: These experiments showed significantly high levels of spontaneously expressed IL-18 mRNA and high protein levels in patients compared to healthy controls (p < 0.0005). Cells stimulated with chlamydial HSP60 (CHSP60) and LPS showed a significantly high expression of IL-18 at the mRNA level (p < 0.0005 for
CHSP60 and p < 0.005 for LPS) and an increased production of IL-18 at protein level (p < 0.0005 for CHSP60 and p < 0.005 for LPS). Conclusion: This study demonstrated de novo synthesis of the inflammatory cytokine IL-18 in atherosclerosis and, furthermore, that chlamydia antigens might play a role in the immunopathological events in this disease by generating more inflammatory mediators such as IL-18.


Abstract: Objectives: The present work explored gene expression and spontaneous induction of the inflammatory cytokine interleukin-18 (IL-18) in atherosclerotic patients. In addition, the effect of the chlamydia heat shock protein 60 (HSP60) and lipopolysaccharide (LPS) on the induction of this mediator was examined. Subjects and methods: Detection of IL-18 mRNA and protein level were assessed by in situ hybridization and immunohistochemistry, respectively, in 15 patients with coronary artery disease undergoing angiograms and 15 matching controls. Results: These experiments showed significantly high levels of spontaneously expressed IL-18 mRNA and high protein levels in patients compared to healthy controls (p < 0.0005). Cells stimulated with chlamydia HSP60 (CHSP60) and LPS showed a significantly high expression of IL-18 at the mRNA level (p < 0.0005 for CHSP60 and p < 0.005 for LPS) and an increased production of IL-18 at protein level (p < 0.0005 for CHSP60 and p < 0.005 for LPS). Conclusion: This study demonstrated de novo synthesis of the inflammatory cytokine IL-18 in atherosclerosis and, furthermore, that chlamydia antigens might play a role in the immunopathological events in this disease by generating more inflammatory mediators such as IL-18.


Abstract: Background: The association between renin C-4063T and angiotensinogen (AGT) T174M, M235T, and A-6G polymorphisms with diabetic nephropathy (DN) was investigated in Tunisian type 2 diabetes (T2DM) patients. Methods: Study subjects comprised 917 T2DM patients (405 normoalbumuric, 329 microalbumuric and 185 macroalbumuric). Genotyping was done by PCR-RFLP. Results: Renin C-4063T allele and genotype frequencies were comparable between DN cases and normoalbumuric controls. Although AGT 235T and -6G allele, and 235T/T and -6G/G genotype frequencies were higher in DN compared to normoalbumuric patients, they were comparable between microalbumuric or macroalbumuric patients. Three-locus AGT haplotype analysis (A-6G/T174M/M235T) identified DN-protective (ATM, AMM, GTM) and DN-susceptible (GTM, ATT, GMT and AMT) haplotypes, and demonstrated enrichment of GTT haplotype in macroalbumuric compared to microalbumuric or normoalbumuric patients. Regression analysis confirmed negative (AMM) and positive (GTM, ATT, GMT, and AMT) association of AGT haplotypes with microalbumuric or normoalbumuric patients. None of the AGT haplotypes was associated with DN severity. Conclusions: Genetic variation at the AGT gene influences the risk of nephropathy in
T2DM patients but not extent of DN severity, and thus represents a potential DN genetic susceptibility locus worthy of replication.

Available at: http://www.ncbi.nlm.nih.gov/pubmed/?term=Interleukin-10+-592C%2FA%2C+-819C%2FT%2C+and+-1082A%2FG+promoter+variants+affect+the+susceptibility+to+nephropathy+in+Tunisian+type+2+diabetes+patients

Abstract: Background: The Interleukin (IL)-10 polymorphic variants -1082G/A, -819C/T and -592C/A were linked with obesity, metabolic syndrome, and type 2 diabetes (T2DM). We investigated the hypothesis that IL-10 promoter polymorphisms may be associated with the progression of diabetic nephropathy (DN). Design: Case-controlled study. Patients: Study subjects comprised of 515 DN patients, and 402 normoalbuminuric (DWN) T2DM patients. Measurements: IL-10 genotyping was done by PCR-based assays, and the contributions of the IL-10 polymorphic variants to DN were analysed by haplotype analysis and multivariate regression analysis. Results: Decreased prevalence of (mutant) -819T allele and -819C/T genotype was seen in DN patients; neither the -1082G/A nor the -592C/A polymorphism was associated with DN. Three-loci haplotype (-1082GA/-819CT/-592CA) analysis identified GTC as DN-protective haplotype. Multivariate regression analysis confirmed the association of GTC haplotype (P = 0.045; OR = 0.56, 95% CI: 0.31-0.99), and in addition identified GTA haplotype (P = 0.044; OR = 0.54, 95% CI: 0.30-0.98) as independent predictors of DN after controlling for a number of covariates (age, sex, BMI; hypertension, glucose, HbA1c, DN duration, total cholesterol, medications). Conclusion: This study suggests that IL-10 promoter polymorphism influence the risk of nephropathy in Tunisian T2DM patients.

Available at: http://www.ncbi.nlm.nih.gov/pubmed/19031431
Abstract: Background: The IL-10 promoter polymorphisms -1082G/A, -819C/T, and -592C/A have been consistently associated with type 2 diabetes (T2DM). We examined whether these polymorphisms variants are also associated with progression of diabetic nephropathy (DN). Methods: These promoter variants were genotyped in 917 T2DM patients comprising 515 DN patients and 402 control patients without nephropathy (DWN), together with 748 non-diabetic control subjects. Haplotype analysis and multivariate regression analysis were employed in assessing the contribution of IL-10 haplotypes to DN risk, using genotype, clinical and biochemical profile, and their interactions as predictors of DN. Results: Carriers of mutant -592A and -819T alleles, and -819T/T, -592A/A, and -819C/T genotypes were more frequent in T2DM. However, the -819C/T genotype appeared to be protective of DN, since lower frequency -819T allele and -819C/T genotype were seen in DN patients. Regression analysis identified -1082G/-819T/-592A (GTA) and -1082G/-819T/-592C (GTC) haplotypes as DN-protective haplotypes. Relative to the -1082G/-819C/-592C haplotype, GTA [P = 0.044; odds ratio
(OR) = 0.54, 95% confidence interval (CI): 0.30-0.98] and GTC (P = 0.045; OR = 0.56, 95% CI: 0.31-0.99) haplotypes were associated with decreased odds ratio (OR) for DN, after controlling for a number of covariates (age, sex, body mass index (BMI), hypertension, glucose, HbA(1c), DN duration, total cholesterol). Conclusions: Our results indicate that genetic variations at the IL-10 promoter influence the risk of nephropathy in T2DM patients and thus represent a potential DN genetic-susceptibility locus worthy of replication.


Abstract: The prevalence of lupus anticoagulant (LAC), anticardiolipin (ACA), anti-beta(2) glycoprotein I (beta(2)GPI), and antiannexin V antibodies were determined in 200 recurrent spontaneous abortion (RSA) patients and 200 age-matched control women. ACA IgG was associated with early, while antiannexin V IgG and LAC were associated with late, and ACA IgG, antiannexin V IgG, and LAC were associated with combined early + late RSA, thereby recommending inclusion of their screening in RSA workout.


Abstract: Point mutations in methylenetetrahydrofolate reductase (MTHFR) and hyperhomocysteinemia were implicated in the pathogenesis of diabetic nephropathy (DN) in many ethnic groups. This study addressed the association of C677T and A1298C single nucleotide polymorphisms (SNPs) of MTHFR gene with DN in Tunisian type 2 diabetes (T2DM) patients. Study subjects comprised 93 DN patients, 267 patients with normoalbuminuria, and 400 control subjects. C677T and A1298C genotypes were determined by PCR-RFLP analysis, and homocysteine levels were measured by ELISA. A1298C and C677T were highly prevalent among T2DM patients, with allele frequencies of 0.26 and 0.36, respectively. Higher mutant 677T allele and 677C/T and 677T/T genotypes of C677T SNP, but not A1298C SNP, together with 677C/1298A, 677C/1298C, and 677T/1298A haplotypes were seen in DN patients compared to normoalbuminuric patients, (p<0.001). Plasma homocysteine was positively associated with MTHFR 677T/T genotype among the three groups, and was significantly elevated in double heterozygous DN patients but not in normoalbuminuric patients or controls. Logistic regression analysis with DN as dependent variable showed that homocysteine (OR, 1.153) and MTHFR 677T/T (OR, 9.799) were the only variables associated with DN, after adjusting for possible confounding variables. C677T, but not A1298C, SNP, is a risk factor for DN, presumably acting by elevating homocysteine levels.

Available at: http://www.ncbi.nlm.nih.gov/pubmed/?term=Diversity+of+plasmid-mediated+carbapenem-hydrolysing+oxacillinases+among+carbapenem-resistant+Acinetobacter+baumannii+isolates+from+Kingdom+of+Bahrain


Available at: http://www.ncbi.nlm.nih.gov/pubmed/21912533

Abstract: Background: Changes in dietary habits and lifestyle are considered the main factors associated with several diet-related diseases in the Arab Gulf countries. The aim of this study was, therefore, to describe the dietary and lifestyle habits amongst adolescents in Bahrain. Design: A cross-sectional study was carried out amongst male and female secondary school students selected using the multi-stage stratified random sampling technique. A sample size of 735 subjects (339 males and 396 females), aged 15-18 years, was selected from government schools from all the governorates of Bahrain. Results: Skipping breakfast was significantly greater in females (62.8%) compared to males (37.2%), (P<0.01). About 88% of adolescents snacked during school break, 70.7% procuring food from the school canteen. Fruit was not consumed by about 27.7% of respondents (33.5% males, 66.5% females) and the gender difference was statistically significant (P<0.01). Fish and lentils were less preferred, while chicken was more popular. There was no significant difference between gender and frequency of eating fast food. About 8.4% of respondents reported not eating burgers, with 68.8% preferring regular size burgers. Furthermore, 24.4% preferred large portions of potato chips (53.1% male, 46.9% female). About 29.8% watched TV for more than 5 hours a day (51.2% females, 48.8% males). About 69% of males practiced sports everyday as against 30.8% of females (P<0.01) and 81.6% of those who participated in sport activity outside school were males compared to 18.4% of females. Conclusion: It seems that the adolescents in Bahrain are moving toward unhealthy dietary habits and lifestyles, which in turn will affect their health status in the future. Promoting healthy lifestyle and eating habits should be given a priority in school health programs.

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Available at: http://www.ncbi.nlm.nih.gov/pubmed/21645028

Abstract: The anti-malarial IgG immune response during the lengthy and dry season in areas of low malaria transmission as in Eastern Sudan is largely unknown. In this study, ELISA was used for the measurement of pre-existing total IgG and IgG subclasses to a panel of malaria antigens, MSP2-3D7, MSP2-FC27, AMA-1 and Pf332-C231. The results showed that the antibody responses were predominantly age dependent, antigen specific, and their lifespan was at least 5-6 month long. Generally, the IgG3 was most abundant IgG subclass, and the most recognized antigen was Pf332-C231. Furthermore, the correlation between the levels of IgG subclasses was
strongest between IgG1 and IgG3, which were more predictive to the total IgG levels. Finally, the response pattern of each of the IgG subclasses to the different test antigens that were spanning the dry season and the correlation between these responses were described in details for the first time.


Abstract: Fulani and Masaleit, two sympatric ethnic groups in eastern Sudan, are characterized by marked differences in susceptibility to Plasmodium falciparum malaria. It has been suggested that sickle cell trait carriage may protect from the most severe forms of malaria. Previously, we have shown that FcgammaRIIa polymorphism is associated with the outcome of malaria disease. The present study aimed at determining whether the two tribes differ in the frequency of FcgammaRIIa and Hb AS genotypes. For this, genotyping of FcgammaRIIa and Hb AS in 70 Fulani and 70 Masaleit age- and sex-matched subjects was conducted. The frequency of FcgammaRIIa H/H131 genotype was higher in the Fulani as compared to the Masaleit group (40.0% versus 14.3%; adjusted odd ratio [OR]=3.05, 95% confidence interval [CI]=1.19-7.82 and P=0.02), while the R/R131 genotype was significantly higher in the Masaleit group (14.3% for Fulani versus 45.0% for Masaleit; adjusted OR=0.26, 95% CI=0.11-0.64 and P<0.01). With regard to FcgammaRIIa allele frequencies, there were significant differences between the Fulani and Masaleit ethnic groups. Thus, the H131 allele was more frequent than the R131 among Fulani children (0.63 versus 0.37, OR=3.23, 95% CI=1.93-5.45 and P<0.001). The frequency of the Hb AS genotype was lower in the Fulani compared to the Masaleit group (15.7% versus 30.0%, respectively, adjusted OR=0.02, CI=0.01-0.18 and P<0.01). These data suggest that FcgammaRIIa and Hb AS polymorphisms may contribute to the clinical outcome of malaria. We conclude that the H/H131 genotype and H131 allele rather than Hb AS genotype (sickle cell trait patients) appear to associate with the Fulani ethnic group.


Abstract: In a prospective clinical study in New Halfa Teaching Hospital, the possible association between FcgammaRIIa-R/H131 polymorphism and anti-malarial antibody responses with clinical outcome of Plasmodium falciparum malaria among Sudanese patients was investigated. A total of 256 individuals were consecutively enrolled, comprising 115 patients with severe malaria, 85 with mild malaria and 56 malaria-free controls. Genotyping of FcgammaRIIa-R/H131 dimorphism was performed using gene-specific polymerase chain reaction (PCR) amplification with allele-specific restriction enzyme digestion of the PCR product. The antibody
responses to asexual blood-stage antigens were assessed by an enzyme-linked immunosorbent assay. The frequency of the FcgammaRIIa-R/R131 genotype was significantly higher in those with severe malaria when compared with patients with mild malaria, while the FcgammaRIIa-H/H131 genotype showed a significant association with mild malaria. A reduced risk of severe malaria with IgG3 antibodies in combination with the H/H131 genotype was observed. Furthermore, low levels of IgG2 antibodies reactive with the Pf332-C231 antigen were also associated with lower risk of severe malaria in individuals carrying the H131 allele. The levels of IgG1 and IgG3 antibodies were statistically significantly higher in the mild malaria patients when compared with the severe malaria patients. Taken together, our study revealed that the FcgammaRIIa-R/R131 genotype is associated with the development of severe malaria, while the H/H131 genotype is more likely to be associated with mild malaria. Our results also revealed that the natural acquisition of immunity against clinical malaria appeared to be more associated with IgG1 and IgG3 antibodies, signifying their roles in parasite-neutralizing immune mechanisms.


Abstract: Background: Methylene tetrahydrofolate reductase (MTHFR) gene variants and hyperhomocysteinemia have been implicated in the pathogenesis of diabetic nephropathy (DN) in various ethnic groups. We investigated the association of C677T and A1298C MTHFR gene variants and altered homocysteine concentrations in Lebanese and Bahraini type 2 diabetes (T2DM) DN patients. Methods: Bahraini subjects comprised 224 DN patients and 328 T2DM patients with normal urine albumin [diabetes without nephropathy (DWN)]. Lebanese subjects comprised 252 DN and 309 DWN patients. C677T and A1298C genotypes were determined by PCR-restriction fragment length polymorphism (RFLP) analysis, and homocysteine was measured by ELISA. Results: A1298C allele and genotype distribution were comparable between DN and DWN patients in both communities. However, there was enrichment of the 677T allele, together with C/T and T/T genotypes in Lebanese but not Bahraini DN patients, thereby conferring DN susceptibility [odds ratio (OR) (95% CI)=2.43 (1.89-3.11) and OR (95% CI)=1.15 (0.83-1.61), respectively; heterogeneity Q=12.53, p=0.0004]. Conclusions: The contribution of C677T single nucleotide polymorphism to increased risk of DN (presumably by increasing homocysteine concentrations) must be evaluated in the context of the ethnic background.


Abstract: A small fraction of children with febrile seizures appears to develop cognitive impairments. Recent studies in a rat model of hyperthermia-induced febrile seizures indicate that prolonged febrile seizures early in life have long-lasting effects on the hippocampus and induce cognitive deficits. However, data on network plasticity and
the nature of cognitive deficits are conflicting. We examined three specific measures of hippocampal plasticity in adult rats with a prior history of experimental febrile seizures: (i) activity-dependent synaptic plasticity (long-term potentiation and depression) by electrophysiological recordings of Schaffer collateral/commissural-evoked field excitatory synaptic potentials in CA1 of acute hippocampal slices; (ii) Morris water maze spatial learning and memory; and (iii) hippocampal mossy fiber plasticity by Timm histochemistry and quantification of terminal sprouting in CA3 and the dentate gyrus. We found enhanced hippocampal CA1 long-term potentiation and reduced long-term depression but normal spatial learning and memory in adult rats that were subjected to experimental febrile seizures on postnatal day 10. Furthermore, rats with experimental febrile seizures showed modest but significant sprouting of mossy fiber collaterals into the inner molecular layer of the dentate gyrus in adulthood. We conclude that enhanced CA1 long-term potentiation and mild mossy fiber sprouting occur after experimental febrile seizures, without affecting spatial learning and memory in the Morris water maze. These long-term functional and structural alterations in hippocampal plasticity are likely to play a role in the enhanced seizure susceptibility in this model of prolonged human febrile seizures but do not correlate with overt cognitive deficits.


Abstract: Mutations in the Plasmodium falciparum pfcrt gene on chromosome 7 and possibly mutations in pfmdr1 on chromosome 5 have a role in conferring resistance against chloroquine (CQ), as do mutations of pfdhfr on chromosome 4 and pfdhps on chromosome 8 in terms of resistance against sulfadoxine/pyrimethamine (SP). The additive role of multiple mutations in the development of resistance to each drug suggests a non-random occurrence. In this study, parasite isolates were obtained from 50 patients with uncomplicated P. falciparum malaria from rural Eastern Sudan, an endemic setting with minimal overlap of infection. The parasite isolates were genotyped for detection of 12 alleles in CQ and SP resistance genes. Our main findings were: (1) the frequency of mutant alleles, pfcrt K76T, pfmdr1 N86Y, pfdhfr N51I, pfdhfr S108N, pfdhps K540E and pfdhps A581G were: 0.90, 0.86, 0.84, 0.84, 0.80 and 0.20, respectively. (2) No mutations were detected for the pfdhfr loci A16V, C59R and I164L, and for pfdhps loci S436A, A437G and A613S. (3) There was a statistically significant association between the mutations in: (i) the CQ resistance (CQR) genes, pfcrt T76 and pfmdr1 Y86 (P< or =0.001), (ii) the SP resistance (SPR) genes, pfdhfr I51, pfdhfr N108 and pfdhps E540 (P< or =0.001-0.04) and (iii) the CQ "i" and SP "ii" resistance genes (P=0.001) 4. The fitness cost of multiple mutations was revealed by a significantly reduced parasite density of isolates bearing the mutant alleles (P=0.048).
However, the significantly higher gametocyte carriage rate among isolates with resistance mutations (P=0.001) is possibly an evolutionary mechanism for survival of mutant parasites.


Abstract: Objectives: Veratridine was characterized previously as an experimental model of epilepsy in vitro. The aim of this preliminary investigation is to identify the pattern of seizure induced by this model in vivo. Material and Methods: Veratridine (200 μg/kg) was administered intraperitoneally to male Sprague-Dawley rats and the electrical activity of the brain was recorded as surface electroencephalogram (EEG). Results: The animals developed behavioral effects manifested as grooming, masticatory movements, facial automatism and wet dog shakes (WDSs). There were episodes of complete quiescent periods for 2-5 minutes before the animals presumed activity which were repeated every 15-20 minutes. The seizure activity during this silent activity showed fast frequency signals in the surface EEG correlating with absence seizure. The WDS behaviour was associated with electrical spikes on the EEG. When the rats were pre-treated with 200 mg/kg ethosuximide (ETX), EEG recordings did not display the same fast frequency signal as that observed in animals receiving veratridine only. The number and duration of WDSs were not altered by ETX (200-400 mg/kg). Conclusions: Veratridine produced an absence like-seizure activity in the surface EEG, sensitive to ETX and correlates with its behavioural effects.


Abstract: Prader-Willi syndrome (PWS) is commonly caused by the absence of the paternal contribution for imprinted genes in chromosomes 15q11. We present a case of a 16 year-old girl with hypotonia, feeding difficulties, failure to thrive and strabismus during infancy followed by hyperphagia, early-onset obesity with insulin-dependent diabetes mellitus and necrobiosis lipoidica diabeticorum, short stature, hypogonadotropic hypogonadism and some of the facial characteristics of individuals with PWS. Routine Giemsa banded chromosomes were obtained from peripheral blood lymphocytes. Karyotype analysis showed a mosaic triple X (46 XX/47XXX). Using methylation studies of the PWS critical region (SNRPN locus) and by polymorphic microsatellite analysis, the existence of microdeletion of the critical area on paternal chromosome 15 was shown in white blood cells. Mosaicism for triple-X was observed in other three reported patients with PWS but in all of these reported cases in uniparental maternal heterodisomy for chromosome 15 was described. The X chromosome mosaicism in our case is presumed to have arisen post-zygotically. The findings in our patient provide evidence that these two chromosomal anomalies are not related and had occurred together coincidentally. Genetic counseling for this family should consider these two conditions separately and provide separate recurrence risks for each.

Paine MA, Scioscia M, Williams PJ, Gumaa KA, Rodeck CH, Rademacher TW. Urinary
Abstract: Objective: Hypertensive disorders represent the most common complications of human pregnancy with substantial impact on fetal and maternal outcomes. Inositol phosphoglycan P-type has recently been identified as a novel marker of preeclampsia, the most severe form of hypertension during pregnancy, with a significant increase in urinary excretion preceding the clinical diagnosis. Methods: A prospective, longitudinal study was carried out to assess the potential of urinary levels of inositol phosphoglycan P-type as a screening test for preeclampsia. A specific ELISA-based test was used to assess urinary levels of P-IPG. Results: Nine patients out of 93 women recruited (496 urinary samples were collected) went on to develop preeclampsia in a cohort of women with high-risk pregnancies. A cut-off value of urinary inositol phosphoglycan P-type was identified by ROC analysis providing a sensitivity and specificity for the current protocol of 88.9% and 62.7%, respectively. Twenty-three women with healthy pregnancies had sporadic episodes of increased excretion of inositol phosphoglycan P-type during pregnancy that consistently resolved back to normal baseline without development of preeclampsia. There was no correlation of urine levels of inositol phosphoglycan P-type and urine protein and patients with gestational hypertension had normal levels of urine inositol phosphoglycan P-type. Conclusions: These findings suggest that, given the rapid raise of P-IPG before the onset of the disease, multiple assessments may help at identifying women at risk of developing preeclampsia.


Abstract: Aims: To determine whether a particular anticonvulsant is more effective or safer than another or placebo in patients with status epilepticus, and to summarize the available evidence from randomized controlled trials, and to highlight areas for future research in status epilepticus. Methods: Randomized controlled trials of participants with premonitory, early, established or refractory status epilepticus using a truly random or quasi-random allocation of treatments were included. Results: Eleven studies with 2017 participants met the inclusion criteria. Lorazepam was better than diazepam for reducing risk of seizure continuation [relative risk (RR) 0.64, 95% confidence interval (CI) 0.45, 0.90] and of requirement of a different drug or general anaesthesia (RR 0.63, 95% CI 0.45, 0.88) with no statistically significant difference in the risk of adverse effects. Lorazepam was better than phenytoin for risk of seizure continuation (RR 0.62, 95% CI 0.45, 0.86). Diazepam 30 mg intrarectal gel was better than 20 mg in premonitory status epilepticus for the risk of seizure continuation (RR 0.39, 95% CI 0.18, 0.86). Conclusions: Lorazepam is better than diazepam or phenytoin alone for cessation of seizures and carries a lower risk of continuation of status epilepticus requiring a different drug or general anaesthesia. Both lorazepam and diazepam are better than placebo for the same outcomes. In the treatment of premonitory seizures, diazepam 30 mg intrarectal gel is better than 20 mg for cessation of seizures without a statistically significant increase in adverse effects. Universally
accepted definitions of premonitory, early, established and refractory status epilepticus are required.


**Abstract:** Background: Even though corticosteroids have been used alongside antituberculosis drugs for tuberculous meningitis (TBM) since the 1950s their role remains controversial. Some believe corticosteroids improve outcome while others point to the lack of supportive evidence. In patients who are immunocompromised because of HIV infection the risks and benefits of steroids are unknown. Objectives: To assess the effects of steroids on death and disability in patients with TBM. Search strategy: We searched the Cochrane Infectious Diseases Group specialized trials register (February 2005), The Cochrane Central Register of Controlled Trials (The Cochrane Library Issue 1, 2005), MEDLINE (1966 to February 2005), EMBASE (1980 to February 2005), and LILACS (February 2005). Selection criteria: Randomised controlled trials of steroids in people on TB treatment for TBM. Data collection and analysis: Two independent reviewers applied study selection criteria, assessed methodological quality and extracted data. Main results: Six trials of 595 patients met the inclusion criteria. No study described allocation concealment. Steroids were associated with fewer deaths (relative risk [RR] 0.79; 95% confidence interval [CI] 0.65 to 0.97) and a reduced incidence of death and severe residual disability (RR 0.58, 95% CI 0.38 to 0.88). Subgroup analysis suggests an effect on mortality in children (RR 0.77, 95% CI 0.62 to 0.96) but the results in a smaller number of adults are inconclusive (RR 0.96, 95% CI 0.50 to 1.84). There is little evidence that the severity of disease influences the effects of steroids on mortality. Authors' conclusions: Adjunctive steroids might be of benefit in patients with TBM. However, existing studies are small, and poor allocation concealment and publication bias may account for the positive results found in this review. No data are available on the use of steroids in HIV positive persons. Future placebo-controlled studies should include patients with HIV infection and should be large enough to assess both mortality and disability.

**Q**


**Abstract:** Global health provides a challenge for primary care and general practice which will become increasingly important in the future as the prevalence of multimorbidity increases. There is increasing likelihood of survival from acute illnesses and increase an in the elderly population. This literature review focuses on the health inequities, the role of family medicine and the factors that are essential inovercoming these inequalities. Health disparities refer to gaps in the quality of health and delivery of health care across racial, ethnic, gender and socioeconomic
groups. The health disparities vary among different countries and the factors that lead to these disparities differ across the world. Family medicine plays a crucial role in bridging this gap and is an essential backbone of the society in developing nations as well as the wealthier nations in providing equity in health care to all people. There are many factors leading to inequity in health care. Family medicine should be recognized as a specialty across the world, as family medicine with its person centered care can bring about a global change in health care. This issue has to be taken up more seriously by the institutions like the WHO, UN and also individual governments along with the political parties to create uniformity in health care. In the current setting of the global economic and financial crisis, a truly global solution is needed. The WHO has come up with various strategies to solve the issue of financial crises and ensuring equity in health globally. This will ensure equal health care to all people especially the underprivileged in developing countries who do not have access to better healthcare due to lack of resources. This factor is a major contributor to the premature death of individuals at all stages of life from new born to the elderly and includes infant mortality and mortality due to chronic diseases. This is important in creating uniformity in health care across the world but has to be considered at a global level to have an impact.

(R)

Rademacher TW, Gumaa KA, Scioscia m. preeclampsia, insulin signalling and immunological dysfunction: a fetal, maternal or placental disorder? J Reprod Immunol 2007; 76(1-2): 78-84.

Abstract: An inappropriate glycogen accumulation in preeclamptic placentas was described as secondary to biochemical alterations. Insulin resistance is widely accepted to be associated with preeclampsia, although its basis remain unclear. A family of putative insulin mediators, namely inositol phosphoglycans, were described to exert many insulin-like effects on lipid and glucose metabolism. A definite association between the P-type mediator (P-IPG) and preeclampsia was reported, being increased in placenta, urine, amniotic fluid and cord blood from human preeclamptic pregnancies. A strong link exists between insulin resistance and inflammation. Clear features of insulin resistance and systemic inflammatory activation were described in preeclampsia. It may be a consequence of the immunological dysfunction that occurs in preeclampsia that is temporized during sperm exposure and co-habitation which confuses the maternal immune network to perceive 'danger'. The over-expression of P-IPG during preeclampsia may be a counter-regulatory mechanism to insulin resistance since these molecules mimic insulin action. Besides, the lipidic form of P-IPG was reported to be similar to endotoxins, and may represent the 'danger signa'. We propose here a novel working theory on insulin resistance and preeclampsia.

Abstract: Case reports of two patients with acute pancreatitis in late pregnancy are presented with a discussion of their management. These cases are reported because this condition often presents a diagnostic challenge, and any delay in diagnosis is associated with increased maternal and fetal morbidity and mortality. The first one was treated in the Obstetrics and Gynecology Department. The second was treated jointly with the surgical department.


Abstract: The discovery that stem cells (SCs) can be obtained from umbilical cord blood instead of the more controversial source of embryonic SCs, has renewed interest on the new, exciting therapeutic potentials of this technology. Several therapeutic targets have been cited as candidates for treatment such as, malignant blood disease, hematological disorders, complex neurological illnesses, genetic and autoimmune diseases, benign and malignant blood diseases, skeletal anomalies, and the ultimate promise of using this technique in delaying the process of human aging. Parallel to this rise in popularity of SC research, SC banking has become a growing commercial enterprise. This review will attempt to present a concise account on the present status of the uses of SC in general, and cord blood (CB) in particular. An evaluation of the debate on the claims, and counter-claims in commercializing CB banking has been summarized.


Abstract: Cervical cancer is estimated as the second most common cause of death worldwide from cancer in women. Approximately 650 women die from this cancer every day; half-million are diagnosed each year. Until recently, the few available reports on the prevalence of cancer from the Arabian Gulf Council States (GCC) were suggestive that the incidence of uterine cancer in general was less common compared with those reported from western country. Cancer registries in the GCC States in the last five years indicate that uterine cancer has moved to the third on the list of leading causes of cancer in the region. Among a population of 1,025,000 in the Kingdom of Bahrain, it is estimated that 10-15 new cases of cervical cancer are diagnosed each year (2001-2007), and approximately 4-6 deaths from this disease per annum. There is an evidence of a gradual increase in the incidence of cervical cancer compared with the figures two decades ago. The ratio of endometrial compared with cervical cancer was 1.2 but the two incidences are presently reversed. Cytology screening for uterine cancer was started in Bahrain in 1971, which soon was integrated in postnatal and in gynecological clinics. Recently successful program of public health screening was introduced against breast cancer in Bahrain; it is imperative that a similar program of national screening against uterine and cervical cancer combined with a national campaign for immunization of adolescent girls against human papilloma virus be integrated in the program and thus reducing the mortality from these two leading causes of cancer death among women. In this article a review of definitions, prevalence and history of cervical cytology service in Bahrain will be presented. Contemporary concepts of cervical cytology, new standard of care and current practice guidelines in screening and prevention will be reviewed. Finally, a discussion on the ways and means of improving the existing cytology and prevention programs in Bahrain will be
Abstract: Infertility is distressing life crises for many couples. Of the 15% of childless couples around the world approximately 15-25% is due to ovulating disturbances. Ovulation induction (OI) therefore strives to redress ovulation problems by replicating the natural physiology of the cyclic ovarian function, with the goal of achieving ovulation of single or more mature follicles. Since the first ever successful induction of ovulation using extract of human cadaver pituitary glands in 1958, there have been substantial advances in the management of anovulatory infertility and an improved insight into the physiology of the micro environments of ovulation. Progressively, the need for new and effective methods for ovulation induction became more intense particularly with the introduction of In Vitro Fertilization procedures in clinical practice. During the last five decades, a large inventory of hormonal therapies for OI and many management protocols have been presented, but more importantly was the new understanding of the varieties of ovarian dysfunctions and the pathophysiology of ovulation failure. The objective of this mini review article is to inform the readers about the current practical approaches in management of ovulation induction addressing the costs, risks, and critical evaluation of their effectiveness.

Abstract: In part I the history of ovulation induction since the sixties of the last century have been reviewed with particular emphasis on the anti estrogen such as clomiphene citrate andsimilar drugs. This was followed by a review of the second phase of ovulation induction which was heralded by the manufacture of the gonadotropins and subsequently the advent of the gonadotropins agonists and antagonists. In this part, the evolution of the methodology of treatment protocols, evaluations of the newly discovered drugs and other interventions utilized in ovulation induction will be discussed. Finally, the side effects of these drugs were reviewed in combination with an exploration of the latest views on the malignant potential of induction of ovulation.

Abstract: An average obstetrician may encounter one or two cases of pregnancies with Osteogenesis Imperfects (OI) in his professional career. It is therefore, difficult to build up sufficient clinical experience to manage these cases in any one set up. This medical report describes a known case of osteogene is imperfecta funda (type I) who became pregnant and delivered in the Salmaniya Medical Complex (SMC). The case is critically discussed with particular emphasis on management and to our knowledge, this is the first case reported from the Kingdom of Bahrain.


Abstract: Objective: Analyse the epidemiologic characteristics of hypertensive disease in pregnancy among women attending for care and delivery in the Salmaniya Medical Complex and peripheral Maternity Units in Bahrain between 1st Jan 2001 to 31st Dec 2003. Design: Retrospective analytical study of all maternity admissions and deliveries during this period. Archival records, labor ward registers, the Medical Records ‘database’ and case records of patients were reviewed [with regard to nationality, age, parity, antenatal care, onset and severity of hypertension, albuminuria, gestational age at delivery age at delivery, mode of delivery, complications of intra partum and post partum complications]. Results: Among 31639 patients delivered during this period there were 934 patients with hypertension, (incidence rate 2.8%). The Bahrainis comprised 85.8% while the non Bahrainis were mainly from the Indian subcontinent (8.6%), from the Philippines (2.9%) and (2.5%) for different nationalities. The median age was 29.81 (SD = 7.207) with 26% in 15-25 year age group, 49% in 26-35 group and 24% in 36-45 year group. Primiparity seems to be a significant risk factor for hypertension and 30% of patients belonged to this group. This risk decreased gradually with every further gestation until the fourth. Afterwards the risk is more parallel to age than to parity. There is an obvious seasonal variation in the incidence of pregnancy induced with higher number of admissions in the summer months (Aug-Nov) and lower incidence during the mild winter-spring season (Dec-May). According to the prevalence of PIH in relation to the period of gestation 62% of cases occurred during the antenatal period, 22% where intra partum and 16% in post partum. Severe preeclampsia was observed in 28.3% of cases, while mild to moderate in 62.5%. Cases of hypertension without albuminuria were 10.2%. There were 11 cases of eclampsia (1.2%) and two cases of HELP syndrome (0.2%). Small for gestational age occurred in 30.3%, out of which 67.6% were delivered preterm and 23% were at term. The Caesarean section rate was 32.7%, with 65.7% emergency and 34.3% were elective. There was only one maternal death in this series in a case of abruption followed by severe post partum hemorrhage, 9 cases of stillbirth (1%) and 8 neonatal deaths (0.9%). Conclusion: Although incidence of preeclampsia is relatively low and the management is effective in preventing and treating cases of pre-eclampsia and eclampsia in this study the morbidity was considerable with longer hospitalization, higher incidence of caesarean deliveries, critical care (ICU), Perinatal mortalities and maternal death. The extent of morbidity is much worse when the patients had little or no prenatal care. This calls for new strategies for the prevention and early diagnosis of pregnancy induced hypertension.


Abstract: Fetal volvulus is an uncommon cause of bowel obstruction, which is rarely detected by an antenatal ultrasound scan. We report a case which presented withfetal stomach and small bowels dilatation at 33 weeks of gestation detected byultrasoundography. She was referred to our unit for safe delivery at 34th week ofgestation following a spontaneous rupture of membranes and signs of fetal distress. Delivery was accomplished by Cesarean section. Postnatally, the infant was surgically explored with resection of ileum and end to end anastomosis because of bowel gangrene and volvulus. Ultrasound diagnosis during pregnancy with fetal bowels dilatation is an
important tool and may lead to early diagnosis and optimal management of intestinal obstruction.


**Abstract:** Hair-nail ectodermal dysplasia (HNED; OMIM 602032) constitutes a rare subgroup of ectodermal dysplasias characterised by onychodystrophy, hypotrichosis and brittle hair. We identified a large consanguineous Pakistani family with four siblings affected by a congenital autosomal recessive form of the disease. Based on previous genetic findings in HNED we performed linkage analysis in the family using chromosome 12 markers. A genetic linkage analysis revealed a lod score of 2.92 (= 0.0) at locus D12S368, indicating the disease gene to be located on chromosome 12. Candidate genes on chromosome 12, including the KRTHB5 gene and four additional keratin II genes, were sequenced in affected family members. Sequence analysis of the coding regions of keratin KRTHB5 gene, previously associated with a distinct clinical form of hair-nail dysplasia, revealed normal coding regions. Our study confirms linkage of a variant clinical form of hair-nail ectodermal dysplasia to chromosome 12 without any mutation in the coding sequences of the KRTHB5 gene. The results suggest this family to have either a non-coding mutation in the KRTHB5 gene, or a mutation in a yet unknown gene within the linked region on chromosome 12.

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Available at: [http://www.jra.sagepub.com/content/11/3/180.short](http://www.jra.sagepub.com/content/11/3/180.short)

**Abstract:** We investigated the contribution of aldosterone synthase CYP11B2 polymorphism (C—344T) to the age-related changes in blood pressure in stroke patients. Subjects and methods. Study subjects comprised 329 stroke patients (121 normotensive, 208 hypertensive) and 444 healthy controls. Genotyping was done by PCR-RFLP, and the contribution of CYP11B2 polymorphism to the risk of stroke was analysed by regression analysis. Results. The T allele, and CT, TT, and CT + TT genotypes, independently of sex and age, were significantly associated with increased stroke risk. Varied distributions of CYP11B2 genotypes were noted among patients with respect to gender, age and hypertension status, being pronounced in hypertensive patients. Both systolic and diastolic blood pressure was positively correlated with the presence of T allele. Mean systolic and diastolic blood pressure were significantly higher among young (<60 years) CT and TT genotype carriers. Regression analysis confirmed the positive association of CT and TT genotypes and systolic blood pressure, and the negative association of diastolic blood pressure with odds of stroke development. Taking normotensive patients as reference, regression analysis identified TT genotype, age and female gender to be independently associated with increased odds of stroke. Conclusion. Compared to CC genotype, CT and TT CYP11B2 genotypes are independently associated with increased stroke index.

Available at:

Abstract: Background and purpose: Endothelial nitric oxide synthase (eNOS) gene polymorphisms were associated with reduced NO production, and were evaluated as risk factors for ischemic stroke (IS). We investigated the association between eNOS gene -786T>C (promoter), 27-bp repeat 4b/4a (intron 4), and Glu298Asp (exon 7) polymorphisms with IS in 329 IS patients and 444 controls. Materials and methods: Glu298Asp and -786T>C genotyping was done by PCR-RFLP, 4b/4a was assessed by PCR-ASA. The contribution of eNOS polymorphisms to IS was analyzed by haplotype and multivariate regression analysis. Results: Higher frequency of 298Asp allele was seen in IS patients (P = 1.2 x 10\(-10\)), which remained independently associated with IS on multivariate analysis after controlling for traditional cerebrovascular risk factors. Allele and genotype distribution of 4b/4a and -786T>C polymorphisms were comparable between patient and controls. Significantly higher prevalence of 298Asp/4b/-786T and 298Asp/4b/-786C haplotypes were seen in IS cases, thus conferring a disease susceptibility nature to these haplotypes. Multivariate regression analysis confirmed the association of 298Asp/4b/-786T and 298Asp/4b/-786C haplotypes, and in addition identified 298Asp/4a/-786T haplotype to be independently associated with IS, after controlling for traditional cerebrovascular risk factors. Conclusions: Genetic variation at the eNOS locus represent genetic risk factor for increased susceptibility to IS.

Available at:

Abstract: A relationship between apolipoprotein E (Apo E) genotype and angiotensin-converting enzyme (ACE) insertion-deletion (Ins-Del) mutation and stroke was suggested. We investigated the association of Apo E4 and ACE Ins/Del genotypes with stroke risk and changes in serum lipids in 228 consecutive Tunisian stroke patients, and 323 age-and gender-matched controls. Comparable frequencies of ACE Ins/Del alleles were seen between patients and controls. The prevalence of Apo epsilon3 allele and Apo E3/E3 were lower (P < 0.001), while the frequency of Apo epsilon4 allele and epsilon4-containing genotypes (E3/E4 and E4/E4) were elevated (P < 0.001) among patients. Higher proportion of Apo E4-carrying + ACE Del/Del positive cases were seen in young (<50 years) patients (P = 0.012), and was associated with large vessel stroke (P = 0.035). Mean serum cholesterol, LDL, HDL, and triglycerides were comparable between E4-containing and no E4-containing and ACE Del/Del-positive patients. Apo E4 and ACE Del/Del genotype combination substantially increase stroke risk, supporting the notion that interactions of multiple gene variants influence stroke pathogenesis.

Available at: http://www.ncbi.nlm.nih.gov/pubmed/?term=Association+between+renin-angiotensin-aldosterone+system+genotypes+and+haplotypes+and+the+risk+of+ischemic+stroke+of+atherosclerotic+etiology

Abstract: Objectives: The association of renin C-4063T and angiotensinogen (AGT) T174M, AGT M235T and AGT A-6G polymorphisms with ischemic stroke of atherosclerotic etiology was investigated in 329 Tunisian patients with stroke and 444 controls. Materials and methods: Genotyping was performed using PCR-RFLP and the contributions of polymorphisms to the risk of stroke were analyzed using haplotype and multivariate regression analysis. Results: AGT 235T and AGT -6G allele and AGT T/T, AGT -6A/G and AGT -6G/G genotype frequencies were higher in patients. Linkage disequilibrium (LD) was noted for AGT174T with AGT235M and AGT(-6)A in patients, while AGT235M was in LD with AGT(-6)A in controls and AGT235T was in LD with AGT(-6)G in both groups. The AGT 174T/235T/-6A and AGT 174T/235M/-6G haplotypes were positively and negatively associated with stroke respectively. Multivariate regression analysis identified AGT 174T/235M/-6A, AGT 174T/235T/-6G, AGT 174T/235T/-6A and AGT 174M/235T/-6A haplotypes to be significantly associated with an increased risk of stroke. Conclusions: Renin-angiotensin-aldosterone system polymorphisms influence the risk of atherosclerotic stroke in Tunisians.


Available at: http://www.ncbi.nlm.nih.gov/pubmed/?term=Lupus+anticoagulants+and+anti-phospholipid+antibodies+as+risk+factors+for+a+first+episode+of+ischemic+stroke

Abstract: Background: Antiphospholipid antibodies (aPLA) and lupus anticoagulant (LAC) were shown to precipitate thromboembolic events. Their association with ischemic stroke remains to be seen. Objectives: We investigated the contribution of LAC, and antibodies directed against the phospholipids cardiolipin (aCL), phosphatidylserine (aPS), and the phospholipid-dependent cofactors beta2-glycoprotein I and annexin V, to the risk for ischemic stroke. Patients/Methods: LAC and antibody levels were measured in 208 stroke patients and 203 age- and gender-matched control subjects. Results: Positive LAC resulted in an increased risk for stroke [OR (95% CI) = 8.1 (2.4-27.5)]. Significant elevation in aPS IgG, aCL IgM and aCL IgG titers, and increased prevalence of elevated aPS IgG, aCL IgM and aCL IgG (based on P95 cutoff values of healthy individuals) were seen in patients. aPS IgG was associated with cardioembolic, whereas aCL IgG and IgM were elevated in lacunar, atherosclerotic and cardioembolic, and LAC positivity was documented only in lacunar stroke subtypes. The co-presence of LAC with a positive aCL IgM/IgG or aPS IgG did not affect the overall risk for stroke. Multivariate analysis confirmed the association of positive LAC with stroke [aOR (95% CI) = 9.7 (1.8-52.5)], and demonstrated a clear gradation of increasing risk of stroke associated with the four categories of aCL IgG and aPS IgG, and identified aCL IgM P95 as independent predictors of stroke after adjusting for potentially confounding covariates. Conclusions: Our study demonstrates that the presence of LAC, and elevated aCL IgG and aPS IgG antibodies are risk factors for stroke.

Saidi S, Mahjoub T, Slamia LB, Ammou SB, Al-Subaie AM, Almawi WY. Association of...


**Abstract:** Polymorphisms in human platelet alloantigen (HPA)-1 and HPA-3 (GPIIb/IIIa), HPA-2 (GPIb/IX), HPA-4 (GPIIIa) and HPA-5 (GPIa/IIa) were investigated in 216 stroke patients and 318 matched control subjects. HPA genotyping was done by the polymerase chain reaction method using sequence-specific primers. Higher frequencies of the HPA-1 a/b (p < 0.001) and HPA-5 a/b (p < 0.001) allele, together with HPA-1 b/b, HPA-5 a/b and HPA-5 b/b genotypes were seen in patients, which was confirmed by regression analysis after controlling for a number of confounding variables. Furthermore, HPA-1 b/b and HPA-5 b/b were significantly associated with the extent of neurological symptoms, and with the recurrence of stroke. Both susceptible (1a/ b -2a/a-3a/ b -4a/a-5a/ b) and protective (1a-2a/a-3a-4a/a-5a/a; 1a/a-2a/a-3a/a-4a/a-5a/a; 1a/ b -2a/a-3a/ b -4a/a-5a/a) HPA genotypes were identified. This is the first evidence demonstrating differential association of the common 5 HPA gene variants with stroke, with HPA-1b and HPA-5b representing strong genetic risk factors.


**Abstract:** Polymorphism in human platelet antigen (HPA)-1 and HPA-3 (GPIIb/IIIa), HPA-2 (GPIb/IX), HPA-4 (GPIIIa), and HPA-5 (GPIa/IIa) was investigated in 329 stroke patients and 444 matched control subjects. HPA genotyping was done by PCR-SSP method. Lower HPA-1a (P < 0.001) and higher HPA-1b (P < 0.001) allele frequencies were seen in patients than control subjects, and homozygosity for HPA-1b (P < 0.001) alleles was more prevalent in stroke cases than in controls. The allele and genotype distributions of the other HPA polymorphic variants were similar between cases and controls. Select HPA combined genotypes comprising the 2121 (Pc = 0.008) and 2221 (Pc = 0.018) genotypes, which were positively associated, and the 1111 (Pc < 0.001), which was negatively associated with stroke, thereby conferred a disease susceptibility and protective nature to these genotype combinations. Multivariate analysis confirmed the negative association of the 1111 (P < 0.001) and the positive association of the 2121 (P = 0.017) combined genotypes with stroke, after adjustment for a number of covariates. This is the first evidence demonstrating differential association of the common 4 HPA gene variants and specific HPA genotype combinations with stroke.


Available at: [http://www.ncbi.nlm.nih.gov/pubmed/17689412?dopt=Citation](http://www.ncbi.nlm.nih.gov/pubmed/17689412?dopt=Citation)

**Abstract:** A relationship between apolipoprotein E (Apo E) genotype and stroke was previously suggested, but with inconsistent results. We investigated the relationships among serum lipid levels, Apo E alleles and genotypes, and stroke risk factors in 216
stroke patients and 282 age- and sex-matched controls. Fasting blood samples were collected for total cholesterol, low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C), and triglyceride level determination and for genomic DNA extraction. Apo was genotyped by polymerase chain reaction-restriction fragment length polymorphism (Cfo I) analysis. Increasing levels of total cholesterol, LDL-C, HDL-C, and triglycerides were associated with elevated stroke risk and was more pronounced in Apo E4-carrying subjects than in E3- and/or E2-carrying subjects. Apo 3 was significantly lower (0.546 vs 0.736; P <.001), whereas Apo 4 was higher in the stroke patients (0.370 vs 0.181; P <.001); Apo 2 was present at low but comparable frequencies. The prevalence of E3/E3 was lower and that of E4-containing phenotypes (E3/E4 and homozygous E4/E4) was higher in the stroke patients. The prevalence of the E4-containing phenotypes were significantly higher in ischemic versus hemorrhagic (P <.001) and in small-vessel versus large-vessel stroke cases (P <.001), and was associated with increased need for statin drugs (P =.040). Logistic regression models, after adjusting for potentially confounding variables including lipid profile, age, and sex, showed an significant association of apo 4 genotype with risk of stroke (P =.033). Our findings indicate that Apo 4 is an independent risk factor associated with an altered lipid profile in this study population.


Abstract: Mutations in the plasminogen activator inhibitor-1 (PAI-1) gene, along with altered PAI-1 and tissue-type plasminogen activator (tPA) levels, have been implicated in stroke pathogenesis. We investigated the association of PAI-1 and tPA levels with stroke as a function of PAI-1 4G/5G and -844G/A genotypes, as well as the link between these PAI-1 gene variants and stroke risk, in a case-control study of 135 ischemic stroke patient, diagnosed according to clinical and radiologic findings and confirmed by computed tomography scan. Controls (n=118) were age- and sex-matched and had no personal/family history of stroke. PAI-1 4G/5G and -844G/A genotyping were done by polymerase chain reaction-restriction fragment length polymorphism, and PAI-1 and tPA levels were measured by enzyme immunoassay. Significant elevation in PAI-1 and marked reduction in tPA levels were seen in stroke patients and were correlated with 4G/5G, but not with -844G/A, PAI-1 variants. Whereas the frequencies of 4G or -844A alleles were comparable between patients and controls, 4G/4G carriers had reduced risk of stroke compared with other genotypes (odds ratio [OR]=0.54; 95% confidence interval [CI]=0.31-0.95). The 4G/-844A haplotype also was more closely associated with reduced stroke risk (OR=0.43; 95% CI=0.20-0.97) than 5G/-844A or 4G/-844G haplotypes. Regression analysis demonstrated that 4G homozygosity (OR=0.176), hypertension (OR=6.288), and body mass index (OR=1.325) were independent predictors of stroke. The protective effect of 4G allele against stroke suggests involvement of PAI-1 4G/5G polymorphism in stroke through a mechanism not related to fibrinolysis, possibly involving altered plaque stabilization, and/or through antagonism of tPA effects.

Abstract: Hyperglycemia-induced oxidative stress makes an important contribution to the etiology of diabetic teratogenicity namely fetal growth and congenital dysmorphogenesis. The aim of this study is to evaluate the protective roles of melatonin and insulin against diabetic's embryolethality and teratogenicity. Diabetes was induced to virgin Sprague Dawley albino rats by a single peritoneal injection of alloxan. Thirty pregnant rats were divided equally into 5 groups: 1) Control 2) Diabetic 3) Diabetic insulin 4) Diabetic melatonin 5) Diabetic melatonin-insulin. Insulin and melatonin were administered daily throughout the whole gestational period. Fetuses were collected on day 20 of gestation and were examined for malformations and growth disorders. A significant increase in fetal growth parameters (Macrosomia) were noticed in the diabetic group compared to the control. Melatonin prevents the appearance of soft tissue anomalies, but it leads to fetal growth restriction of diabetic rats (Microsomia). No significant changes were noticed in fetal growth parameters in diabetic insulin or in diabetic melatonin-insulin groups compared to the control. Congenital anomalies were not seen in diabetic insulin and in diabetic melatonin-insulin groups while the rate of resorption was reduced in both groups when compared to the diabetic group. In conclusion, co-administration of melatonin with insulin leads to a slight non significant improvement of the protective role of insulin against diabetic embryolethality, teratogenicity and fetal growth changes.


Abstract: Deletion polymorphisms for the glutathione S-transferase (GST) gene are associated with increased risk of cancer, and are implicated in detoxifying mutagenic electrophilic compounds. GST Polymorphic variants were reported for different populations. The aim of this study was to investigate the frequencies of GSTM1 and GSTT1 null genotypes among Bahraini, Lebanese and Tunisian Arabs. GST genotyping was done by multiplex PCR-based methods. Study subjects comprised 167 Bahrainis, 141 Lebanese and 186 Tunisians unrelated healthy individuals. GSTM1 deletion homozygosity of 49.7%, 52.5% and 63.4% were recorded for Bahraini, Lebanese and Tunisians, respectively. Among Bahrainis, the prevalence of GSTT1 null homozygotes was 28.7%, while in higher rates were seen in Lebanese (37.6%) and Tunisians (37.1%). Our results indicate that there are no major differences in allelic distribution of GSTM1 and GSTT1 genes between the three Arab populations investigated except between Bahrainis and Tunisians regarding the allelic distribution of GSTM1 gene (P=0.013). Combined analysis of both genes revealed that 14.4% of Bahrainis, 16.3% of Lebanese and 21.0% of Tunisians harbor the deleted genotype of both genes. This is the first study that addresses GST gene polymorphism in Bahraini and Lebanese Arabs, and will help genetic studies on the association of GSTM1 and GSTT1 polymorphisms with disease risks and drug effects in Arab populations.

Salem AH, Farid E, Fadel RAR, Abu-Hijleh, M., Almawi W. Han K, Batzer MA. Distribution of four HIV type 1-resistance polymorphisms (CCR5-Delta32, CCR5-m303, CCR2-64I, and SDF1-3'A) in the Bahraini population. AIDS Res Hum Retroviruses 2009; 25(10): 973-7. Available at:
Abstract: Allelic differences of chemokine (C-C motif) receptor 5 (CCR5) and CCR2, as well as the ligand for the chemokine receptor CXCR4, stromal-derived factor (SDF-1), are known to suppress HIV-1 transmission and to be involved in delay in HIV-1 disease progression. The aim of our study was to investigate the frequencies of four mutations that confer resistance to HIV-1: CCR5-Delta32, CCR5-m303, CCR2-64I, and SDF1-3'A among Bahrainis. We have studied the DNA polymorphisms in 304 unrelated healthy Bahraini individuals without any known history of HIV-1 infection or AIDS symptoms. The CCR5-Delta32 mutation was detected by PCR analysis, while the CCR5-m303, CCR2-64I, and SDF1-3'A mutations were detected by PCR-restriction fragment length polymorphism (PCR-RFLP) tests. Allele frequencies and the fit to the Hardy-Weinberg equilibrium were evaluated using the Arlequin population genetics application. The frequencies of the CCR5-Delta32, CCR2-64I, and SDF1-3'A alleles were 2.8%, 8.9%, and 26.5%, respectively. No mutant alleles were detected for the CCR5-m303 mutation in 304 individuals. We estimated the risk of AIDS onset (relative hazard), computed from the three-locus genotype data. This is the first report of these four mutations conferring resistance to HIV-1 in the Bahraini population. The presence of the CCR5-Delta32 allele among Bahrainis may be attributed to the admixture with people of European descent. The CCR2-64I allele and especially the SDF1-3'A allele are predominant in the Bahraini population and may be associated with resistance to fast HIV-1 infection in Bahrainis, and thus their genotyping can be used for prognosis in HIV-infected individuals.


Abstract: Background: Intestinal fatty acid-binding protein (IFAPB) is expressed only in intestinal enterocytes. It may participate in the uptake, intracellular metabolism and/or transport of long chain fatty acids. A polymorphism at codon 54 in exon 2 of the FABP2 gene, which encodes for the IFAPB, exchanges an Alanine (Ala) for Threonine (Thr). The goal of this study was to determine the frequency of the Ala54Thr FABP2 polymorphism in the Egyptian population. Patients and Methods: Genotyping was carried out in 180 unrelated Egyptian subjects. DNA was extracted from blood samples for genotype analysis. A PCR-RFLP assay was applied for the determination of Ala54Thr FABP2 polymorphism. Allele frequencies were calculated by direct counting. Hardy Weinberg Equilibrium was evaluated using a Chi-square goodness of fit test. Results: showed that 102 (56.7%) of the studied Egyptian subjects were homozygous for the Ala54/Ala54 genotype, 60 (33.3%) were heterozygous for the Ala54/Thr54 genotype and 18 (10.0%) were homozygous for the Thr54/Thr54 genotype. The frequencies of the allele Ala54 and the allele Thr54 of the FABP2 Gene were found to be 0.733 and 0.267, respectively. The results revealed a similar population polymorphism frequency as in previous European studies. Conclusion: This is the first study to look at the population frequency of the Thr54 allele in Egypt.

Salem AH. Han K, Batzer MA. Allele frequencies of the human platelet antigen-1 in the Egyptian population. BMC Res Notes. 2009; 2:90. Available at:
Abstract: Background: The human platelet alloantigen system HPA-1 in the Egyptian population was examined by polymerase chain reaction using sequence-specific primers (PCR-SSP). The objectives of this study were to evaluate the allele frequency of HPA-1a and -1b in healthy Egyptian individuals and compare these with the international literature. Human platelet antigen (HPA) systems are associated with alloimmunization and organ transplantation rejection as well as the development of cardiovascular disease. Of the various HPA systems, HPA-1 specifically has been considered to be the most important antigenic system implicated in the Caucasian population. No study has yet examined this system in the Egyptian populations, however. We therefore investigated the allele frequency of the HPA-1 system in the Egyptian population. Findings: To determine the allele frequency of the HPA-1a and -1b, we tested genomic DNAs from 206 healthy, unrelated Egyptian individuals using PCR-SSP. Our results showed that the 1a/1a genotype was the most predominant (59.22%) followed by 1a/1b (34.95%) and 1b/1b (5.83%) with allele frequencies for 1a and 1b of 0.77 and 0.23, respectively, in the population. Conclusion: As compared with other geographic groups, a relatively high allele frequency of the HPA-1b in the Egyptian population may indicate a higher risk of alloimmunization. This study is the first to investigate the allele frequency of the HPA-1 system in the Egyptian population and serves as an outline for future clinical research associated with platelet disorders in this group.


Abstract: The goal of this study was to determine the frequency of the single nucleotide polymorphism C3435T in MDR1 gene in the Bahraini population, and to compare them with the frequencies established in other ethnic populations. Genotyping was carried out on 184 unrelated Bahraini subjects. A PCR-RFLP assay was applied for the determination of MDR-1 variants. Results showed that 64 (34.8%) of the studied Bahraini subjects were homozygous for the CC genotype, 84 (45.7%) were heterozygous for the CT genotype and 36 (19.5%) were homozygous for the TT genotype. The frequencies of the wild-type allele 3435C and the 3435T variant in the MDR-1 Gene were found to be 0.58 and 0.42, respectively. In conclusion, Bahrainis resemble other Arabs with regard to allelic frequencies of the MDR-1 variants. The results of MDR-1 genotyping in Bahraini individuals may provide a framework for more rational use of drugs that are substrates for MDR-1. The data obtained may be useful in clinical pharmacogenetic investigations and epidemiological studies of the MDR-1 gene variation.


Available at: http://www.scumj.eg.net/pdf/vol11-n1-2008/20.pdf

Abstract: The angiotensin-converting enzyme (ACE) gene in humans contains an insertion-deletion (I/D) polymorphism in its intron 16. This polymorphism has been widely investigated in different populations because of its involvement with renin-angiotensin system. However, similar studies for Arab populations are limited. This study addresses the distribution of ACE gene polymorphism in two Arab populations (Egyptians and Syrians).
The polymorphisms of ACE enzyme were investigated using polymerase chain reaction for detection of I/D mutation. The results showed a high frequency of the ACE D allele among Egyptians (0.67) and Syrians (0.60) which is similar to those obtained from previous studies for Arab populations. The relationship between ACE alleles and disease in these two Arab populations is still not known, but the present results clearly suggest that ethnic origin should be carefully considered in the increasing number of studies on the association between ACE alleles and disease etiology. This study adds to the data showing the wide variations in the distribution of the ACE alleles in different populations and highlights that great care needs to be taken when interpreting clinical data on the association of the ACE alleles with different diseases.


Abstract: A mutant allele of the β-chemokine receptor gene CCR5 bearing a 32-basepair (bp) deletion that prevents cell invasion by the primary transmitting strain of HIV-1 has recently been characterized. Individuals homozygous for the mutation are resistant to infection, even after repeated high-risk exposure, but this resistance appears not absolute, as isolated cases of HIV-positive deletion homozygotes are emerging. The consequence of the heterozygous state is not clear, but it may delay the progression to AIDS in infected individuals. In order to evaluate the frequency distribution of CCR5-Δ32 polymorphism among Egyptians, a total of 200 individuals (154 from Ismailia and 46 from Sinai) were tested. Only two heterozygous individuals from Ismailia carried the CCR5-Δ32 allele (0.6%), and no homozygous (Δ32/Δ32) individuals were detected among the tested samples. The presence of the CCR5-Δ32 allele among Egyptians may be attributed to the admixture with people of European descent. Thus we conclude that the protective deletion CCR5-Δ32 is largely absent in the Egyptian population.


Abstract: Problem: Protein Z (PZ) system is an anticoagulant pathway involved in the physiologic regulation of coagulation, and PZ deficiency reportedly enhances prothrombophilic mechanisms, including those implicated with idiopathic recurrent miscarriage (RSM). We investigate plasma anti-PZ IgM and IgG levels in RSM women and in multiparous control women. Methods: Anti-PZ IgM and IgG levels were measured in 265 RSM women and 283 age-matched control women by ELISA. Results: Elevated anti-PZ IgG (P < 0.001) and IgM (p < 0.001) titers were seen in patients. The areas under the curves for ROC curve for anti-PZ IgM (0.898 ± 0.044) and IgG (0.898 ± 0.042) demonstrated no variation in diagnostic capacity. Multivariate analysis confirmed the association of elevated anti-PZ IgM [adjusted odds ratio, aOR (95% CI) = 6.46 (2.44-17.11)] and IgG [aOR (95% CI) = 7.44 (2.54-21.79)] as
independent predictors of RSM after adjusting for confounding covariates and demonstrated a clear gradation of increasing RSM risk associated with increased antibody titers.


Abstract: Anti-annexin V antibodies have been identified as risk factors for recurrent spontaneous miscarriage (RSM) in some, but not all previous studies. We investigated the association between anti-annexin IgM and IgG in RSM cases and control women. Blood samples from 244 women with idiopathic RSM, and 283 multi-parous control women were tested for anti-annexin V antibodies by ELISA. A significant elevation in anti-annexin V IgM and IgG was seen in the RSM cases. An increased prevalence of elevated anti-annexin V IgM and to a lesser extent anti-annexin V IgG was seen in RSM patients. Receiver operating characteristic analysis indicated that the area under the curve for anti-annexin V IgM was 0.916, and for anti-annexin V IgG was 0.725. A systematic shift in anti-annexin V IgM and IgG distributions toward higher values occurred in RSM women, which was confirmed by percentile analysis. For each of the anti-annexin V isotypes, the adjusted odds ratio increased as the percentile value increased; the strongest risk was for anti-annexin V IgM, in which the 99th percentile (P99) was associated with a 165-fold higher risk than P50, and for anti-annexin V IgG where P99 was associated with a 38-fold higher risk than P50. In addition, a higher prevalence of elevated anti-annexin V IgM and anti-annexin V IgG was seen in RSM cases than in control women. We conclude that anti-annexin V IgM and IgG antibody positivity are independent risk factors for RSM.


Abstract: Despite its monogenic nature, sickle cell disease (SCD) has a heterogenous phenotype with a number of associated complications, which range in severity from mild to severe and crippling, and can affect virtually all organ systems. Common SCD complications include hemolytic crisis, splenic sequestration, aplastic crisis, stroke, acute chest syndrome, osteomyelitis and vaso-occlusive crisis (VOC). While some SCD patients remain asympomatic, others may present with one or more of these complications. Several studies have evaluated potential biomarkers for SCD VOC, which can be effectively used in identifying high-risk VOC patient groups, and in the patient follow-up, but with inconsistent findings. This article discusses the predictive value of anti-annexin V autoantibodies in monitoring the onset and severity of VOC, including the nature of the pain-alleviating medication. Among SCD complications, VOC is numerically the most significant. It can present primarily as acute painful crisis, or in association with other SCD complications (acute chest syndrome and stroke), ultimately leading to periodic disability, and, in some cases, and shortened life expectancy. VOC is attributed to the aggregation of sickle erythrocytes in the vascular bed, caused by the presence of deoxygenated hemoglobin, and also to the precipitation
of an inflammatory state, triggered by heightened cytokine production, leukocyte activation and upregulated expression of adhesion molecules. Enhanced thrombin generation, coupled with imbalance of the profibrinolytic and antifibrinolytic systems, depletion of natural anticoagulants and increased levels of circulating soluble tissue factor are some of the common features of VOC episodes.


**Abstract:** Vaso-occlusive crisis (VOC) is a significant cause of morbidity and mortality in sickle cell anemia (SCA) patients; however, its mechanisms are poorly understood. In view of their prothrombotic nature, we hypothesized that SCA-associated VOC may be due to the presence of anti-annexin V antibodies. Anti-annexin V antibodies were measured with ELISA in 177 VOC and 81 steady-state SCA patients. Anti-annexin V IgM and IgG concentrations were significantly higher in VOC patients than in steady-state patients and were associated with elevated VOC risk. After categorizing anti-annexin V antibodies, the adjusted odds ratio increased as the percentile value increased. Monovariate logistic regression analysis demonstrated a positive dose-effect relationship for anti-annexin V IgM with VOC, with increased VOC risk seen with increased antibody titers. Multivariate logistic regression analyses confirmed the association of anti-annexin V IgM, more so than IgG, as an independent VOC risk factor. Anti-annexin V IgG antibodies correlated positively with VOC type and negatively with HbF and age of VOC onset, while anti-annexin V IgM correlated positively with VOC type, duration, frequency, site, pain severity, hospitalization, and medication, and negatively with age of VOC onset and HbS levels. High levels of anti-annexin V IgM antibodies constitute a risk factor for VOC in SCA patients.


**Abstract:** Absence of the palmaris longus muscle has been well documented in several populations at a prevalence rate ranging between 2.2 and 63.9% which varies according to race, sex, and side of the body. There is little documentation of the prevalence of absence of this muscle from populations in the Arabian Gulf region. We examined 1,043 subjects, 3-85 years old, from the Kingdom of Bahrain for the presence or absence of the palmaris longus muscle using the conventional test for the presence of this muscle. Statistical analyses investigated the association of muscle absence with sex, hand dominance, and laterality. The palmaris longus muscle was absent in 36.8% of subjects. Bilateral absence (19%) was more common than unilateral absence (17.9%) with preponderance in female subjects. The muscle was absent more often on the left side than the right (P=0.003). In the right upper limbs the muscle was absent in female subjects more than male subjects (P=0.031). This study reaffirms that there is population variation in the frequency of absence of the palmaris longus muscle. The tendon of the palmaris longus bifurcated at the wrist in 7.1% of subjects, with male subjects showing this feature more frequently than female subjects in the right hand (P=0.037) and the left hand (P=0.030). This has not been reported before. The clinical significance of our findings is discussed.

**Satir AA.** An update on the pathogenesis and pathology of hepatocellular carcinoma. Bah
Primary malignant neoplasms of the liver arise from hepatocytes, intrahepatic bile ducts, blood vessels and endothelial cells (Box 1). Hepatocellular carcinoma (HCC) is a malignant neoplasm of hepatocytes and constitutes more than 80% of primary malignant liver neoplasms. HCC is the preferred terminology and terms like "hepatoma" and "liver cancer" should be avoided because they are not precise. Hepatocellular carcinoma (HCC) is second only to carcinoma of the pancreas in being the most lethal form of human cancer. Almost all patients die within 6-7 months after the diagnosis. This is especially true in areas of high endemicity. This dismal prognosis is due to lack of reliable biomarkers that permit early diagnosis, resistance of the tumour to chemotherapy and the underlying diffuse liver disease that limits the use of chemotherapeutic agents in medical management. Other than primary prevention, one hope of changing the prognosis is early diagnosis (See below). HCC is the fifth most common internal malignancy world wide and the commonest internal malignancy in men below the age of 45 years in Sub-Saharan Africa. There is significant geographical variation. The tumour is common in China, Southeast-Asia and Sub-Saharan Africa where the prevalence is estimated to be 100/100,000 population as compared to 3/100,000 in Europe and U.S.A.


Abstract: The metabolic syndrome that occurs in preeclampsia reflects the complex interactions between immunological alterations and the systemic inflammation that have been shown to take place during this complication of human pregnancy. Inositol phosphoglycans play a definite role in the insulin resistance in preeclampsia with a higher production and urinary excretion of this molecule before and during preeclampsia. Recent researches suggest that the feto-placental glucose metabolism in the first and early second trimester is mainly linked to the nonoxidative pathway of glycogen catabolism supporting the pivotal role of the inositol phosphoglycan P-type. In this article we present the results of a case-control study carried out in the first trimester to evaluate the potential of urinary P-IPG release as a early marker of the disease. A single mid-stream sample of maternal urine was collected at 11 weeks of gestation for this single centre retrospective study. Twenty-seven patients out of 331 women recruited (8.1%) went on to develop preeclampsia but no sample attained positivity. Further details about the development of the metabolic syndrome during preeclampsia were retrieved also from other studies to implement our knowledge about the pathophysiology of this syndrome and to identify biochemical aspects that could help in clinical practice.


Abstract: Objective: Abnormal metabolism of inositol phosphoglycan P-type (P-IPG) has been described in insulin-resistant states. Recently, a definite link between P-IPG and preeclampsia has been reported. P-IPG release after insulin stimulus has been
described in the placental tissue of healthy women and a complete absence of P-IPG release has been found in preeclamptic samples, associated with disturbed insulin signaling. This study was undertaken to assess the release of this mediator in intrauterine growth restriction (IUGR) and hypertensive disorders other than preeclampsia. Methods: Seven women with IUGR, seven with gestational hypertension, 11 with preeclampsia, and 12 controls were recruited for this study. Fresh placental membranes were prepared and incubated with human recombinant insulin. Bioactivity of P-IPG released after insulin stimulus was assessed using a specific bioassay. A multiple comparison between groups was carried out. The study population provided a statistical power of 0.94. Results: P-IPG release was highest and lowest from healthy and preeclamptic samples, respectively (p < 0.01). Specimens from patients with IUGR and gestational hypertension released less P-IPG than did controls (p < 0.05). Conclusions: Abnormal release of P-IPG from placentas of IUGR and gestational hypertensive mothers seems to confirm an association between these disorders of human pregnancy and insulin resistance.


Abstract: An association between inositol phosphoglycan P-type (P-IPG) and preeclampsia has been demonstrated over recent years. This molecule can mediate many of the metabolic and growth promoting effects of insulin. Dysregulation of the mediator family is associated with insulin resistance. An increased concentration of P-IPG has been reported in preeclamptic placenta, although its precursor (GPI) was undetectable in those placental samples. Insulin administration, that induces P-IPG release in normal human placenta, was shown not to cause production/release of the mediator from preeclamptic placental tissue as a consequence of a disturbed insulin signalling. Amniotic fluid is enriched of this mediator, with further increase during preeclampsia. We have found that the fetus released increasing amounts of P-IPG in the urine between 13 and 18 weeks of gestation, reaching a plateau beyond 20 weeks. Cord blood of infants of preeclamptic mothers showed an increased content of soluble P-IPG compared to controls and to the mother.


Abstract: Objective: The mechanisms underlying insulin resistance during normal pregnancy, and its further exacerbation in pregnancies complicated by gestational diabetes mellitus (GDM), are generally unknown. Inositolphosphoglycan P-type (P-IPG), a putative second messager of insulin, correlates with the degree of insulin resistance in diabetic subjects. An increase during normal pregnancy, in maternal and fetal compartments, has recently been reported. Methods: A cross-sectional study was carried out in 48 women with GDM and 23 healthy pregnant women. Urinary levels of P-IPG were assessed spectrophotometrically by the activation of pyruvate dehydrogenase phosphatase in urinary specimens and correlated with clinical parameters. Results: Urinary excretion of P-IPG was higher in GDM than in control women (312.1 +/- 151.0 vs. 210.6 +/- 82.7 nmol NADH/min/mg creatinine, P < 0.01) with values increasing throughout pregnancy in control subjects (r2 = 0.34, P < 0.01).
P-IPG correlated with blood glucose levels \((r(2) = 0.39, P < 0.01\) for postprandial glycaemia and \(r^2 = 0.18 P < 0.01\) for mean glycaemia) and birthweight in the diabetic group \((r^2 = 0.14, P < 0.01)\). Conclusions: Increased P-IPG urinary excretion occurs in GDM and positively correlates with blood glucose levels. P-IPG may play a role in maternal glycaemic control and, possibly, fetal growth in GDM.


Abstract: Background/aims: The mechanisms underlying overgrowth of adipose tissue in fetuses of women with gestational diabetes mellitus (GDM) are generally unknown. Inositol phosphoglycan A-type (A-IPG), a putative second messenger of insulin, was reported to regulate lipogenesis in adipose tissue. IPGs have recently been shown to increase during normal pregnancy, in maternal and fetal compartments.

Methods: 48 women with GDM and 23 healthy pregnant women were recruited for this cross-sectional study. Levels of A-IPG were assessed enzymatically in urinary specimens and correlated with clinical parameters.

Results: A-IPG urinary release was lower in GDM patients \((p < 0.01)\) and correlated positively with BMI \((p < 0.01)\) and negatively with glycaemic control in the diabetic group (postprandial glycaemia and glycated haemoglobin, \(p < 0.01\)) in addition to a nearly significant correlation with birth weight \((p = 0.08)\). Furthermore, a lower A-IPG urinary release was found in diabetic subjects with normal fasting glycaemia compared with those with poor fasting glycaemic control \((p < 0.05)\).

Conclusions: An altered A-IPG urinary excretion occurs in GDM with a negative correlation with poor glycaemic control. Our data suggest an interesting potential role of this molecule in maternal metabolic control during pregnancy and, possibly, in fetal growth.


Available at: http://www.sciencedirect.com/science/article/pii/S0165037809002526

Abstract: In preeclampsia, there is exacerbation of physiological changes associated with pregnancy such as insulin resistance, altered immune responses and inflammatory pathway activation. These exaggerated responses seen in preeclampsia are reminiscent of metabolic syndrome, and also are evident in gestational diabetes mellitus. The link between these phenomena is not clear but novel findings providing some insight have been reported recently. Inositol phosphoglycan P-type (P-IPG) in preeclampsia has been extensively investigated and increased production has been demonstrated. This molecule acts as a second messenger of insulin, enhances the metabolic effects of insulin and is associated with insulin resistance. This review article summarizes current evidence of the role of inositol phosphoglycans in the metabolic syndrome that occurs in preeclampsia, discussed in the light of modifications found in gestational diabetes mellitus and diabetes type 2 in pregnancy in humans and animal models. An increase in urinary release of P-IPG during pregnancy may herald the onset of preeclampsia. Further knowledge about the nature of the metabolic syndrome during preeclampsia and the degree of association between its components will help to inform future research efforts and to identify biochemical markers that could help in clinical practice, for example early markers that will have utility in managing disease


Abstract: A progressive insulin resistant state develops throughout human pregnancy. Inositol phosphoglycan P-type (P-IPG), a second messenger of insulin, was reported to negatively correlate with the degree of insulin resistance in non-pregnant diabetic subjects. Urinary levels of P-IPG were assessed in insulin resistant states during pregnancy such as gestational diabetes mellitus (GDM, n=44) and type 2 diabetes mellitus (type 2 DM, n=25) and in 69 normal pregnant women. Urinary levels of P-IPG were higher in GDM than controls with a positive trend of release throughout normal pregnancy (P<0.01). P-IPG excretion was higher in diabetic (GDM and type 2 DM) than in healthy women in the second trimester (P<0.05). A higher P-IPG urinary excretion occurs during the second trimester in pregnant women with clinically evident insulin resistance with a positive association with poor glycemic control.


Abstract: Objective: To evaluate the pattern of antibiotic prescriptions for paediatric upper respiratory tract infections (URTI) and determine the associated predictors for such antibiotic use in the Kingdom of Bahrain. Subjects and methods: From March 2005 to March 2006, demographic data, clinical presentation, investigations and antibiotic prescription for children with URTI (n = 184) at the Bahrain Defence Force Hospital was recorded. To assess the factors which influence physician antibiotic prescription for URTI, a cross-sectional survey of doctors was carried out using a pre-tested questionnaire which was administered to paediatricians, general practitioners and emergency room physicians. Results: Antibiotics were given to 95 of the 184 (51.6%) patients, mainly children <3 years (40/95). Significant association was demonstrated for antibiotic prescription, age and diagnosis of tonsillitis or acute otitis media (p < 0.05). Amoxicillin (37/95) was the most frequently prescribed antibiotic, followed by beta-lactam/beta-lactamase combination and second-generation cephalosporins. Fever, younger age, sore throat and presence of earache increased the likelihood of antibiotic prescription. Data from the cross-sectional survey of doctors revealed that lack of national guidelines, parental pressure and diagnostic uncertainty contributed to antibiotic overuse. Conclusion: Antibiotic overuse for the treatment of paediatric URTI remains a problem in our setting. We suggest the development of national guidelines which are integrated with structured continuing medical education courses, public awareness campaigns and the introduction of rapid streptococcal antigen tests in the outpatient clinic.

Available at:

Abstract: Campylobacter jejuni antibiotic resistance is rising with a variable geographical pattern; but there is limited data from the Arabian Gulf region. We assessed the sensitivity of human (117) and chicken (33) C. jejuni isolates to erythromycin, ciprofloxacin, tetracycline and trimethoprim-sulfamethoxazole by agar dilution, disc diffusion and the E test. Only 2 human isolates were resistant to erythromycin. In contrast, over 80% of chicken and human isolates were resistant to ciprofloxacin. A significantly higher proportion of chicken isolates than human isolates were resistant to tetracycline, with much higher MIC(50) values (P<0.001). The MIC(90) for trimethoprim-sulfamethoxazole by agar dilution was 40 microg/ml. Comparison of the results of the agar dilution method and E test showed 1 major disagreement and 8 minor disagreements for erythromycin, 4 major disagreements for ciprofloxacin and 23 disagreements for tetracycline (19 were major disagreements).

This was the first study to describe the pattern of antibiotic resistance in Campylobacter isolates in this region; the results indicate a high degree of erythromycin sensitivity that validates the continued use of this agent as a first-line therapy for Campylobacter enteritis. These findings have wide implications because of the large, highly mobile expatriate population in this setting. In addition, the correlation between agar dilution and disc diffusion supports the use of the latter as an alternative susceptibility testing method for Campylobacter.

Available at:

Abstract: Objectives: This study has been conducted to look at the anti acid effect of Neem and to compare the effect of leaf extract with the pure compound nimolicine on the gastric acidity. Nimolicine has been studied for its anti acid effect for the first time. Design of Study: Experimental study. Place of Study: This study was conducted in the department of Physiology, Baqai Medical College and the Department of Pharmacology in Baqai Institute of Pharmaceutical Sciences, Karachi. Materials and Methods: Ethanol induced gastric ulcers in albino rats were treated with methanolic neem leaf extract (800mg/day for 5 days) and nimolicine (1%/day for 3 days) and the gastric acid secretion was estimated. The control of the treated group was given peanut oil 1 ml/day for 5 days. The effect on gastric secretion was compared with the effect of anti-ulcer drugs cimetidine® (50 mg/kg for 7-10 days) and omeperazole® (2.5 mg/kg/day for 7-14 days). Result: Neem leaf extract is a better suppressor of H-ion secretion compared to nimolicine but both neem leaf extract & nimolicine did not show a significant suppression of acid compared to ranitidine and omeperazole. The comparison between control and ranitidine in suppression of acid was significant. Conclusion: Methanolic NLE and neem compound nimolicine do not decrease gastric acidity and their role as anti-ulcer agents may be because of other mechanisms which need to be studied.

Siddiqui QA, Shaikh SA, Qureshi TZ, Subhan MMF. A comparison of red-green color

Available at: http://www.smj.org.sa/PDFFiles/Aug10/08A_Comparison.pdf

Abstract: Objectives: To investigate the prevalence of red-green colour vision deficiency (CVD) among medical and dental students compared with non-medical students. Methods: This descriptive, cross-sectional study compared the prevalence of CVD between medical and non-medical Pakistani students. A total of 926 medical and dental students from Baqai Medical University, Karachi, Pakistan were compared with 7288 non-medical students from Nadirshaw Edulji Dinshaw University of Engineering and Technology, Karachi, Pakistan, and Pakistan Air Force (PAF) Public Schools (Muree and Sugodha), Pakistan. Standard Ishihara colour vision charts were used, which provided an accurate assessment of CVD. More than 3 mistakes from plates 10-17 identified students as having red green CVD. The study was carried out from September 2003 to December 2008.

Results: The overall prevalence of CVD in the study population was 2.75%. There were no significant differences between male students in engineering college versus medical college (2.7% versus 4.4%. p=0.125), or between schools and universities (3.1% versus 3.1%, p=0.930).

Conclusion: A small proportion of the Pakistani population suffers from red-green CVD, more prominent in males. We found no difference between students in engineering college versus medical college, or between schools and universities in different geographical locations within Pakistan.


Abstract: Objective: To determine the occurrence of class A and class C β-lactamase genes and their co-occurrence in Indian Enterobacteriaceae. Methods: 52 third generation cephalosporin resistant isolates were phenotypically detected by combination disk method and screened by PCR to identify class A and class C type β-lactamase genes. Results: Of the 52 isolates, 94.2% (49) were found harboring any of the blaESBLs, blaCTX-M, blaSHV and blaTEM were present in 82.6% (43/52), 59.6% (31/52), and 42.3% (22/52) isolates, respectively. Of the 49 ESBL positive isolates 57.1% (28/49) showed co-occurrence of blaampC with blaESBLs. On the contrary, the collection from 2009 showed their co-occurrence in 81.4% isolates. Conclusions: The comparative study shows a downward trend for co-existence of blaESBLs with blaampC from 2009 to 2010. Further large scale studies are needed to address the co-occurrence of class A and class C β-lactamases in India and the resistance trend occurring over a period of time.


Abstract: The frequencies of autoantibodies against glutamic acid decarboxylase 65 (GAD65) and islet cell antigen (ICA) 512/IA-2 (512/IA-2) are functions of the specific human leukocyte antigen (HLA) in type 1 diabetes mellitus (T1D). We investigated the association of HLA class II (DR and DQ) alleles and haplotypes with the presence of GAD and IA-2 autoantibodies in T1D. Autoantibodies were tested in 88 Tunisian T1D patients and 112 age- and gender-matched normoglycemic control subjects by enzyme immunoassay. Among T1D patients, mean anti-GAD antibody titers were higher in the DRB1*030101 allele (P < 0.001), together with the DRB1*030101/DQB1*0201 (P<0.001) and DRB1*040101/DQB1*0302 (P=0.002) haplotypes, while lower anti-GAD titers were associated with the DRB1*070101 (P=0.001) and DRB1*070101/DQB1*0201 (P=0.001) and DRB1*110101/DQB1*030101 haplotypes (P=0.001). Mean anti-IA-2 antibody titers were higher in the DRB1*040101 allele (P=0.007) and DRB1*040101/DQB1*0302 (P=0.001) haplotypes but were lower in the DRB1*110101 allele (P=0.010) and the DRB1*110101 (P<0.001) and DRB1*110101/DQB1*030101 (P=0.025) haplotypes. Multinomial regression analysis confirmed the positive association of DRB1*030101 and the negative association of DRB1*110101 and DQB1*030101, along with the DRB1*070101/DQB1*0201 and DRB1*110101/DQB1*030101 haplotypes, with anti-GAD levels. In contrast, only the DRB1*040101/DQB1*0302 haplotype was positively associated with altered anti-IA-2 titers. Increased GAD65 and IA-2 antibody positivity is differentially associated with select HLA class II alleles and haplotypes, confirming the heterogeneous nature of T1D.


Abstract: Aim: We investigated the association of tumor necrosis factor (TNF) α gene polymorphism with type 1 diabetes (T1D). Methods: TNF-α -1031T/C, -863C/A, -857C/T, -376G/A, -308G/A, -238G/A, and +488G/A single nucleotide polymorphisms (SNPs) were assessed in 198 T1DM patients and 180 age-and gender-matched, normoglycemic control subjects using PCR-restriction fragment length polymorphism (RFLP). Results: Higher frequencies of -863A (p=8.0 × 10-6), -857T (p=1.4 × 10-4), and -238A (p=0.002) alleles were seen in T1D patients than in the control group. Significant differences were noted in the distribution of -863T/C, -857C/T, -376G/A, -308G/A, and -238G/A genotypes between patients and controls. Haploview analysis revealed high linkage disequilibrium (LD) between the -376G/A and -308G/A SNPs, but this was lower between the other polymorphisms. Five-locus TNFα haplotypes were constructed based on the prevalence of individual SNPs and the LD between them. An increased frequency of CTGGG, CCGAG, and ACGGG haplotypes, and a reduced frequency of the CCGGG haplotype was seen in patients. When the Bonferroni correction was applied, differences were significant for the CTGGG (Pc=1.4 × 10-3), CCGAG (Pc=0.023), and ACGGG (Pc=1.2 × 10-3) haplotypes which were greater, and the CCGGG haplotype (Pc=3.8 × 10-5) which was smaller, among T1D patients, thereby conferring susceptibility to and protection from T1D, respectively. Conclusion: These results demonstrate that TNF-α polymorphisms, in particular -863C/A, -857C/T, and -238G/A, are significantly associated with T1D. Additional studies, on other racial groups, are needed to confirm our findings.


Abstract: Human leukocyte antigen (HLA) class II genes contribute to the genetic susceptibility to Type 1 diabetes (T1D), and susceptible alleles and haplotypes were implicated in the pathogenesis of T1D. This study investigated the heterogeneity in HLA class II haplotype distribution among Tunisian patients with T1D. This was a retrospective case control study done in Monastir in central Tunisia. The subjects comprised 88 T1D patients and 112 healthy controls. HLA-DRB1 and -DQB1 genotyping was done by PCR-sequence-specific priming. Significant DRB1 and DQB1 allelic differences were seen between T1D patients and controls; these differences comprised DRB1*030101 and DQB1*0302, which were higher in T1D patients than in control subjects, and DRB1*070101, DRB1*110101, DQB1*030101, and DQB1*060101, which were lower in T1D patients than in control subjects. In addition, the frequencies of DRB1*030101-DQB1*0201 and DRB1*040101-DQB1*0302 were higher in T1D patients than in control subjects, and the frequencies of DRB1*070101-DQB1*0201 and DRB1*110101-DQB1*030101 haplotypes were lower in T1D patients than in control subjects. Multiple logistic regression analysis revealed the positive association of DRB1*030101-DQB1*0201 and DRB1*040101-DQB1*0302 and the negative association of only DRB1*070101-DQB1*0201 haplotypes with T1D. Furthermore, a significantly increased prevalence of DRB1*030101-DQB1*0201 homozygotes was seen for T1D subjects than for control subjects. Our results confirm the association of specific HLA-DR and -DQ alleles and haplotypes with T1D in Tunisians. The identification of similar and unique haplotypes in Tunisians compared to other Caucasians highlights the need for evaluating the contribution of HLA class II to the genetic susceptibility to T1D with regard to haplotype usage and also to ethnic origin and racial background.


Abstract: HLA DRB-DQB contribution to type 1 diabetes (T1D) was investigated in Bahraini, Lebanese, and Tunisians. DRB1*030101-DQB1*0201 was susceptible in three populations, while DRB1*040101-DQB1*0302 was susceptible only in Tunisians and Bahrainis; DRB1*100101-DQB1*050101 (Bahrainis), and DRB1*150101-DQB1*060101 (Lebanese) were largely protective. HLA contribution to T1D must be evaluated with regards to ethnic background.

Abstract: Tumor necrosis factor alpha (TNF-alpha) -308 G/A and lymphotoxin alpha (LTalpha) +249 A/G single-nucleotide polymorphisms were investigated in 228 type 1 diabetes mellitus (T1DM) patients and 240 controls. Only LTalpha +249G allele and +249G/+249G genotype frequencies were higher among patients, and no linkage disequilibrium was found between TNF-alpha/LTalpha alleles and susceptible/protective DRB1-DQB1 haplotypes. TNF-alpha/LTalpha T1DM-susceptible (-308G/+249G) and protective (-308G/+249A) haplotypes were identified.


Abstract: Study objective: The objective of the study was to test the hypothesis that fraction of exhaled nitric oxide (FENO) is elevated in nonsmoking subjects with stable chronic obstructive pulmonary disease (COPD) and compare it with the results in patients with asthma and a control population.

DESIGN: Cross-sectional study. Materials and methods: Pulmonology Clinic at a University Hospital. Twenty five control subjects, 25 steroid naïve asthmatics and 14 COPD patients were studied. All the patients were nonsmokers and stable at the time of the study. All subjects completed a questionnaire and underwent spirometry. Exhaled nitric oxide was measured online by chemiluminescence, using single-breath technique. RESULTS: All the study subjects were males. Subjects with stable COPD had significantly higher values of FENO than controls (56.54±28.01 vs 22.00±6.69; P=0.0001) but lower than the subjects with asthma (56.54±28.01 vs 84.78±39.32 P=0.0285). The FENO values in COPD subjects were inversely related to the FEV1/FVC ratio. There was a significant overlap between the FENO values in COPD and the control subjects. CONCLUSION: There is a significant elevation in FENO in patients with stable COPD, but the elevation is less than in asthmatic subjects. Its value in clinical practice may be limited by the significant overlap with control subjects.


Abstract: This study aimed to define the profile of asthmatic children in Bahrain and the prevalence of sensitization to aeroallergens and foods. A total of 95 children who were clinically diagnosed with asthma were enrolled: 71.6% mild, 20.0% moderate and 8.4% severe asthma (NIH criteria). Serum IgE concentrations were elevated (>200 kU/L) in 21.1% of patients and highly elevated (>400 kU/L) in 9.5%. Absolute eosinophil counts were elevated (>350 × 106/L) in 54.8%. Overall, 67.4% of children
were atopic; 56.8% were sensitive to inhalant allergens and 39.0% to foods. The atopic profile was generally similar to asthmatic children in the region and worldwide. Conditions significantly associated with atopic asthma included food allergies, allergic rhinitis and eczema.

**W**


**Abstract:** A state of insulin resistance has been demonstrated in active preeclampsia, and women with clinical evidence of insulin resistance are at higher risk to develop this syndrome during pregnancy.Recently, inositol phosphoglycan P-type, a putative second messenger of insulin action, has been implicated in the pathophysiology of preeclampsia and is increased in the placenta, amniotic fluid, and maternal urine of preeclamptic women compared with normal pregnant women. We report here a case-control study to assess the potential of urinary levels of inositol phosphoglycan P-type as a screening test for preeclampsia. Twenty-seven preeclamptic women and 47 healthy pregnant women were recruited. A polyclonal antibody-based ELISA was developed to detect levels of inositol phosphoglycan P-type in urine. Its content in urinary specimens was found to be 30-fold higher in preeclamptic subjects than control subjects (329.1+/-21.8 versus 9.2+/-1.5; P<0.001), with a higher level in all of the preeclamptic cases. For 6 women who developed preeclampsia, >1 gestational date sample of urine was available, and retrospective analysis showed a significant time-related increase of the urinary level of inositol phosphoglycan P-type <or=7 weeks before clinical diagnosis of preeclampsia. Urinary level of inositol phosphoglycan P-type increased after diagnosis indicating a possible pathophysiological threshold level and steeply decreased after delivery.

**Z**


*Available at:* [http://www.ncbi.nlm.nih.gov/pubmed/18394614?dopt=Citation](http://www.ncbi.nlm.nih.gov/pubmed/18394614?dopt=Citation)

**Abstract:** Objective: To investigate the contribution of the -238G/A and -308G/A tumor necrosis factor (TNF) alpha, and +252A/G lymphotoxin (LT) alpha gene polymorphisms to idiopathic recurrent miscarriage (RM). Design: A retrospective case-control study. Setting: Outpatient maternity center. Patient(s): Study subjects comprised 372 RM women and 274 age-matched parous control women. Intervention(s): None. Main outcome measure(s): The TNFalpha and LTalpha gene variants and idiopathic RM. Result(s): Higher prevalence of TNFalpha -238A and LTalpha +252G alleles and LTalpha +252G/G genotype and lower frequencies of TNFalpha -308G/A were seen in RM cases. Three-loci haplotype analysis (TNFalpha -308GA/TNFalpha -238GA/LTalpha +252AG) demonstrated significant association between TNFalpha-LTalpha gene variants and RM. Both protective [-308A/-238G/+252A], and susceptible [-308G/-238A/+252G] haplotypes were identified. Multivariate regression analysis confirmed the association of -308G/-238A/+252G haplotype with exclusively early RM, after controlling for a number of covariates; no specific TNFalpha and LTalpha
genotypes or haplotypes were linked with either late or combined early and late RM. Conclusion(s): The TNFalpha -238G/A and LTalpha +252A/G, but not TNFalpha -308G/A, polymorphic variants are associated with exclusively early idiopathic RM.


Abstract: Heightened expression of tumor necrosis factor (TNF)-alpha and lymphotoxin-alpha (LT-alpha) was associated with pregnancy complications, including idiopathic recurrent miscarriage (RM). Whereas TNF-alpha and LT-alpha gene polymorphisms affect serum cytokine concentrations, their contribution to RM is controversial. The single nucleotide polymorphisms (SNPs) TNF-alpha (-238G/A, -308G/A) and LT-alpha (+252A/G) were investigated in 350 RM women and 200 control women. Higher frequency of the TNF-alpha -238A, but not the TNF-alpha -308A or the LT-alpha+252G, allele was seen in patients, with comparable frequencies of TNF-alpha -238G/A, TNF-alpha -308G/A, and LT-alpha+252A/G genotypes seen between both groups, except for TNF-alpha -238G/G, which was lower in patients. Regression analysis confirmed the association of the TNF-alpha -238G/A SNP with idiopathic RM, and both TNF-alpha -308A/TNF -238G/LT-alpha+252G and TNF-alpha -308G/TNF-alpha -238A/LT-alpha+252G haplotypes played a susceptible role in idiopathic RM. TNF-alpha -238G/A and -238A/A, and LT-alpha+252G/G genotypes were positively associated only with exclusively early RM. This supports the concept of the association of TNF-alpha (-238G/A) and LT-alpha (+252A/G) polymorphic variants in idiopathic RM.
(A)
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Al-Haddad MK. Scattered papers: Arab organization for research and publication; 2011.


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