

Selected Abstracts of Articles Published Elsewhere by Authors in Kuwait

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Vertebral Artery - Posteroinferior Cerebellar Artery Aneurysms: Clinical and Lower Cranial Nerve Outcomes in 52 patients

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Objective: To identify factors predictive of postoperative lower cranial nerve palsy (LCNP) among patients undergoing surgery for vertebral artery (VA) - posteroinferior cerebellar artery (PICA) aneurysms. The natural history of this LCNP is defined, and its effect on postoperative patient course is analyzed. No similar study has been described in the literature.

Methods: Fifty-two patients with VA-PICA aneurysms, who were treated surgically between 1996 and 2002, were retrospectively studied to identify factors contributing to postoperative LCNP. The effect of LCNP on intensive care unit stay and development of nosocomial pneumonia also was analyzed. All analyses were performed with Fisher's exact test.

Results: Postoperative LCNP occurred in 25 patients (48.1%) with VA-PICA aneurysms. Of the factors investigated, the use of temporary or total occlusion was associated with increased incidence of postoperative LCNP ($P < 0.001$). The average length of stay in the intensive care unit was 13.8 days for patients with LCNP defined as none or mild ($P = 0.0014$). Nosocomial pneumonia occurred only in patients with moderate to severe LCNP ($P = 0.022$). Postoperative LCNP resolved completely within 3 months in 12 patients (48%) and within 6 months in 19 patients (76%).

Conclusion: The results of this study can help to identify the effect and natural history of LCNP after surgical clipping of VA-PICA aneurysms. This information may assist neurosurgeons in expediting treatment, decrease the cost and length of hospital stays, and result in improved outcomes.

Key Words: Glasgow Outcome Scale, Lower cranial nerve palsy, Subarachnoid hemorrhage, Vertebral artery-posteroinferior cerebellar artery aneurysm

Bacteriology of Urinary Tract Infection Associated with Indwelling J Ureteral Stents

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Purpose: To investigate the microorganisms responsible for urinary tract infection (UTI) and stent colonization in patients with indwelling J ureteral stents and to compare the antimicrobial susceptibility pattern of the isolates from urine and J stents in order to establish the etiologic agents of bacteriuria and colonized stents in such patients and provide baseline data on an antibiotic policy for the urology unit.

Patients And Methods: Midstream urine from 250 patients requiring J stent insertion was investigated microbiologically prior to stent insertion and on the day of stent removal. After stent removal, 3 to 5 cm of the tip located in the bladder was also sent for culture. Patients' bio-data and underlying diseases were documented. Those with no known systemic diseases ("normal patients") were also studied as controls. Of the 250 patients studied, 152 (61%) were normal, while 27 (11%), 53 (21%), and 18 (7%) had diabetes mellitus (DM), chronic renal failure (CRF), and diabetic nephropathy (DN), respectively. The mean duration of stent retention was 27 days. All microbial isolates were tested for their susceptibility to a panel of 10 antibiotics.

Results: Twelve patients (5%) before stent insertion and 42 patients (17%; $P < 0.001$) on the day of stent removal had positive urine cultures. One hundred four stents (42%) were culture positive. Of the 104 patients with positive stent cultures, in 62 patients (60%), urine culture was sterile. The commonest isolates were *Escherichia coli*, *Enterococcus* spp., *Staphylococcus* spp., *Pseudomonas*, and *Candida* spp. On the day of stent removal, urine culture was positive in 28% of the normal patients compared with 57% ($P = 0.11$), 78% ($P < 0.001$), and 62% ($P < 0.001$) of patients with CRF, DM, and DN, respectively. Stent isolates were more resistant to antibiotics than the organism isolated before stent insertion.

Conclusion: An indwelling J ureteral stent carries a significant risk of bacteriuria and stent colonization. The sensitivity of urine culture to stent colonization is low, and therefore, a negative culture does not rule out a colonized stent. Bacteria cultured from urine after stent insertion and from the stents are more resistant to antibiotics than are those cultured from urine before stent insertion. Norfloxacin or ciprofloxacin is recommended as prophylaxis prior to stent insertion, and an aminoglycoside can be added to treat symptomatic patients with severe infections.

Infantile Hyperinsulinism Associated with Enteropathy, Deafness and Renal Tubulopathy: Clinical Manifestations of a Syndrome Caused by a Contiguous Gene Deletion Located on Chromosome 11p

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We describe the clinical features of a new syndrome causing hyperinsulinism in infancy (HI), severe enteropathy, profound sensorineural deafness, and renal tubulopathy in three children born to two pairs of consanguineous parents. This combination of clinical features is explained by a 122-kb contiguous gene deletion on the short arm of chromosome 11. It deletes 22 of the 39 exons of the gene coding for the SUR1 component of the KATP channel on the pancreatic beta-cell thereby causing severe HI. It also deletes all but two of the 28 exons of the USH1C gene, which causes Usher syndrome and is important for the normal development and function of the ear and the eye, the gastrointestinal tract, and the kidney, thereby accounting for the symptoms of deafness, vestibular dysfunction and retinal dystrophy seen in type 1 Usher syndrome, diarrhoea, malabsorption, and tubulopathy. This contiguous gene deletion provides important insights into the normal development of several body organ systems.

Predicting Factors Influencing the Fatal Outcome of Burns in Kuwait

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A prospective study was carried out on a total of 2111 burn patients admitted at the Burn Center in Kuwait, during 1993 to 2001, with the purpose of predicting the risk factors influencing the fatal outcome. A total of 111 (5.3%) patients died, giving an annual average of 12 deaths, and a mortality

rate of 0.64/100,000 population. The data, from the in-patient records, included the most commonly available demographic features viz. age, gender and nationality, as well as best recorded clinical factors, such as cause of burn, total body surface area (TBSA), duration of hospital stay and outcome, for analysis. Kolmogorov-Smirnov z test showed the median age (30 years) and TBSA (80%) significantly higher ($p < 0.001$) among those died as compared to 24 years and 10%, respectively in patients survived. The Chi-square test revealed a fatal outcome associated with gender and cause of burn. The multiple logistic regression model predicted patients, aged 60 years and above (OR: 9.9, $p < 0.001$), female gender (OR: 2.2, $p < 0.016$), Flame burns (OR: 3.5, $p < 0.035$), and TBSA > 90% (OR: 23.5, $p < 0.001$), as the most influencing risk factors for a fatal outcome at this burn center. Patients with these characteristics need to be given special attention during in-patient care.

Invasive Fungal Infections in Kuwait: A Retrospective Study

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A retrospective review of a five year period (1994-1998) revealed that opportunistic mycoses caused by ubiquitous fungal pathogens are a serious problem in the immunocompromised patient population of Kuwait. Patients with renal transplantation and diabetes mellitus were most susceptible to aspergillosis, cryptococcosis, and zygomycosis, whereas patients with candidemia/hematogenous candidiasis had multiple risk factors. Basidiobolomycosis of the rectum in a Bangladeshi male, cryptococcosis due to *Cryptococcus neoformans* var. *gatti* in an AIDS patient, fungal peritonitis due to *Absidia corymbifera* in a patient on peritoneal dialysis, and endocarditis due to *Aspergillus terreus* detected by direct microscopic examination and culture of the blood clot are some of the notable cases diagnosed during the period under review. The predominance of *Candida* species other than *C. albicans* as bloodstream pathogens is another noteworthy observation. Although outbreaks of *C. parapsilosis* candidemia in neonatal intensive care units contributed significantly to this shift in favour of non-*albicans* *Candida* species, a surveillance strategy comprising of molecular, epidemiologic and antifungal susceptibility studies is warranted. With the proposed expansion of organ and bone marrow transplantation facilities in Kuwait, the incidence of opportunistic fungal infections is likely to increase.

Spectrum of Autoimmune Bullous Diseases in Kuwait

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Background: Autoimmune bullous diseases (ABDs) are a rare but significant group of dermatoses that pose great challenges to the treating dermatologist. Most epidemiological studies have focused on a single ABD. Few surveys have been carried out to describe the whole spectrum of ABDs in a region, and no such studies are available from the Arabian Peninsula.

Objectives: To determine the clinico-epidemiological features of various ABDs in Kuwait, and to compare the results with those reported elsewhere.

Methods: A total of 128 cases of ABDs were studied over a span of 11.5 years. The diagnosis in all cases was confirmed by histopathology, and direct and indirect immunofluorescence (IMF). The diagnosis of various subepidermal ABDs was further confirmed by indirect IMF on salt-split skin (SSS) and that of pemphigus by desmoglein 1 and 3 enzyme-linked immunosorbent assay (ELISA).

Results: Eighty seven per cent of patients were of Arab ethnicity. Pemphigus was observed to be the commonest ABD (47%), followed by pemphigoid (22%), pemphigoid gestationis (PG) (19%), linear IgA bullous disease (LABD) (7%), lichen planus pemphigoides (LPP) (3%), and epidermolysis bullosa acquisita (EBA) (2.3%). The minimum estimated incidence in the local population was 4.6, 2.14, 1.83, 0.69, 0.30, and 0.23 cases per million per year, respectively. Pemphigus patients were

observed to have a younger age of onset (36.50 +/- 11.36 years) than reported elsewhere. BP, although the second commonest ABD, was less prevalent than in Europe and Singapore, and BP patients were observed to have a striking female predominance (85%). The prevalence of PG was much higher than that reported elsewhere. LABD was the fourth commonest ABD, and 89% of patients were children.

Conclusions: The study suggests that similar surveys from different regions would expand our understanding of ABD.

Parental Perceptions of Costs and Benefits of Children as Correlates of Fertility in Kuwait

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Kuwait is a high fertility country where the average number of desired children still exceeds 5. However, fertility behaviour is beginning to show a noticeable change and the current TFR is about 4.2 children. In order to understand the decline in fertility, the impact of perceived benefits and costs of children on Kuwaiti women's desired and achieved fertility is analysed. Data from a nationally representative survey of Kuwaiti households held in 1999 are used. Bivariate analyses show that the mean desired number of children is significantly higher among those who rank higher on the perceived value of children, and lower among those who are concerned about the cost of raising children. Achieved fertility (children ever born) shows a similar pattern. In the multivariate analysis, however, large family values emerge as the only significant predictor of (higher) desired as well as achieved fertility, net of the respondent's demographic and socioeconomic characteristics. The sociocultural, economic and political contexts that shape the mother's perceptions of the benefits and costs of children are analysed and it is concluded that the need for children as social and national capital is currently the most important driving force behind fertility desires and behaviour.

Mode of Presentation and First Line of Management of Non-Recurrent Urolithiasis in Kuwait

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AIMS: To determine the incidence, mode of presentation, first line of management and composition of non-recurrent urolithiasis in Kuwait. **METHODS:** Consecutive patients admitted between January 1999 and December 2002 with non-recurrent urolithiasis were prospectively analyzed. **RESULTS:** The average annual incidence of hospital admission for non-recurrent urolithiasis in Kuwait was 43.44 per 100,000 population, representing men and women (ratio, 9:1) with a median age of 41.91 years. Of the hospital admissions for non-recurrent urolithiasis, 57.2% of cases were acute. Overall, the most predominant symptom was flank pain, while the least common symptom was acute urinary retention. Ureteroscopic stone manipulation was the most common initial treatment modality in the present series, as it was utilized in 43.3% and 37.09% for patients admitted on elective and emergency basis, respectively. Of the calculi available for chemical analysis, 91% contained calcium, 73% contained calcium oxalate, 17% contained mixed calcium and 1% contained calcium phosphate. The composition of the rest of the stones were urate in 7%, struvite in 1% and cystine in 1%. **CONCLUSIONS:** Urolithiasis is a common disease in the Kuwait region that mainly presents with flank pain. Ureteroscopic calculus removal is the most common modality of treatment. The majority of the calculi seen in Kuwait contained calcium.

Pattern and Determinants of Dyslipidaemia in Type 2 Diabetes Mellitus Patients in Kuwait

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We conducted a clinical study to assess the pattern of dyslipidaemia in type 2 diabetic patients and to examine the demographic and clinical factors associated with dyslipidaemia. The study population comprised 206 consecutive type 2 diabetic patients attending the out-patient clinic at a major hospital in Kuwait. Clinical history and physical examination were done and fasting blood samples were taken to determine HbA1c and lipid levels. American Diabetes Association criteria were applied to define clinical targets for lipid levels and coronary heart disease risk categories. Stepwise multiple linear regression was conducted to identify the demographic and clinical factors associated with lipid levels outside of the clinical target. The large majority of the patients were either over-weight (32%) or obese (57%); the mean BMI was 32.6 kg/m². Serum total cholesterol, LDL-cholesterol, and triglycerides were above optimal levels in 67%, 86%, and 25% of patients, respectively. For HDL-cholesterol, 63% of men and 71% of women had values below the corresponding optimal level. Only 14 patients (6.8%) had all three lipid values within the respective target level. The percentages of patients with one, two, or all three lipid values outside of target were 31%, 46%, and 16%, respectively. The most frequent (41%) pattern of dyslipidaemia was a combination of LDL-cholesterol level above target with HDL-cholesterol level below target; the second most common pattern was an isolated increase in LDL-cholesterol, observed in 21% of the patients. In the stepwise regression analyses, glycaemic control was strongly associated with dyslipidaemia (i.e. high total- and LDL-cholesterol and triglycerides); female gender were associated with low HDL-cholesterol. Kuwaiti type 2 DM patients have a high prevalence of dyslipidaemia and obesity. Weight reduction, increased physical activity, improved glycaemic control, and increased HDL-cholesterol levels, along with reduced LDL-cholesterol, should be important goals of therapy in these patients to reduce the risk of coronary heart disease.

Systemic Lupus Erythematosus in Kuwaiti Children: Organ System Involvement and Serological Findings

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The course and severity of systemic lupus erythematosus (SLE) in children is generally similar to the adult form with potential serious organ system involvement, there are, however, factors that influence the prevalence and clinical behavior of the disease. Our objective was to analyse the organ system involvement and immunological findings in Kuwaiti children with SLE in relation to gender and age of onset and compare these findings to that in published reports. Organ system involvement and serologic profiles were analysed in 35 children with SLE. The major organ systems studied were: renal, hematological, cardiac, pulmonary, hepatic and the central nervous system. The prevalence of ANA, anti-dsDNA, anti-Sm, SSA, SSB and anti-cardiolipin antibodies were studied in addition to complement C3 and C4 levels. The results showed that a high percentage of children had hematological involvement (34%); thrombocytopenia (23%) and hemolytic anemia (20%). Renal involvement was proven by biopsy in only 10 children (29%). Neuropsychiatric manifestations were seen in five (14%) of patients. Males had a tendency for major organ involvement relative to females. All patients had positive ANA tests. All males had positive anti-dsDNA tests compared to 86% of female patients. The most significant finding in this study is the high frequency of hematological manifestations and the relatively low incidence of renal disease and neuropsychiatric abnormalities in Kuwaiti children with SLE.

Comparative Prevalence of Isolated Sleep Paralysis in Kuwaiti, Sudanese, and American College Students

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A questionnaire measuring the incidence of isolated sleep paralysis was administered to 527 Kuwaiti, 762 Sudanese, and 649 American college students in what was the first study assessing the prevalence of isolated sleep paralysis in two Middle Eastern countries. Using the item "unable to move," 28.8% of Kuwaiti, 29.9% of Sudanese, and 24.5% of American participants reported experiencing the disorder at least once. When a second item, "pressure to the chest," was also used, the respective percentages were 19.2%, 20.7%, and 11.4%. With both criteria, the Kuwaiti and Sudanese had a significantly greater prevalence than did the American students. The Kuwaiti and Sudanese students did not differ significantly from each other in the percentage who reported the symptoms.

Apolipoprotein E Polymorphism and Lipoprotein Levels in a Gulf Arab Population in Kuwait: a Pilot Study

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Background: APOE polymorphism is believed to confer susceptibility to coronary heart disease (CHD) and Alzheimer's disease. It is well known that patterns of APOE polymorphisms differ between populations and ethnic groups, although most of the data available so far have been in whites.

Subject And Methods: We evaluated the frequencies of APOE genotypes and their relationships with serum levels of lipids, lipoproteins and apolipoproteins in two groups of Gulf Arab citizens: a control population of healthy voluntary blood donors (n=106), and a group of patients presenting to the lipid clinic for the first time with combined hyperlipidaemia (CH) (n=41). In both groups, fasting serum total cholesterol (TC), triglycerides (TG), HDL, LDL and apolipoprotein A1 and B levels were measured by routine autoanalyzer methods, and APOE genotyping was performed by validated PCR methods. The lipid and lipoprotein levels were related to the specific APOE allele frequencies. Results: Allele frequencies were 5.7% for *E2, 85.4% for *E3, and 9.0% for *E4 in the healthy blood donor group. An essentially similar pattern was seen in the patients with CH. This APOE allelic distribution conforms to patterns described in Chinese, whites and South Asians. In both the blood donor and CH groups there were no consistent links between specific APOE pattern and serum lipoproteins, as would have been predicted from APO *E2 and APO *E4 frequencies.

Conclusions: We conclude that APOE allelic patterns in healthy Kuwaiti blood donors and a smaller group of patients with CH do not satisfactorily predict circulating blood levels of lipids and lipoproteins.