

Selected Abstracts of Articles Published Elsewhere by Authors in Kuwait

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Family History of Benign Thyroid Disease and Cancer and Risk of Thyroid Cancer

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In a population-based study of 313 case-control pairs in Kuwait, we evaluated whether a family history of benign thyroid disease (BTD) and thyroid or other cancers was associated with an increased risk of thyroid cancer, the second most common neoplasm among women in this and several other Arab countries in the Gulf region. Family history of BTD was reported by 78 (24.9%) cases and 40 (12.8%) controls in 132 and 57 relatives, respectively. There was an approximately 2-fold increased risk of thyroid cancer in individuals who had a mother (Odds Ratio (OR)=2.3; 95% Confidence Intervals (95% CI): 1.1-5.1), sister(s) (OR=2.6; 95% CI: 1.3-5.3) or aunt(s) (OR=2.1; 95% CI: 0.9-5.3) with BTD; there was also a significant trend in increasing risk with an increasing number of affected female relatives ($P < 0.0001$). Stratification by age at diagnosis of the case showed that individuals aged ≤ 35 years, who had an affected first- or second/third-degree relative(s), had an approximately 3-fold increased risk of the cancer. Family history of thyroid cancer was reported by 9 (2.9%) cases in 13 relatives (11 females, 2 males) and by 3 controls in 3 relatives (all females) (OR=3.0; 95% CI: 0.8-11.1). The OR for all hormone-related cancers combined was 1.5 (95% CI: 0.8-2.6). There was no clear association with family history of breast or any other common cancer. Our data suggest that a family history of BTD is associated with an increased risk of thyroid cancer, and point to the role of familial susceptibility to BTD and thyroid cancer in the Kuwaiti population.

Assessment of Tracheal Intubating Conditions in Children using Remifentanil and Propofol without Muscle Relaxant

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Background: Tracheal intubation in children can be achieved by deep inhalational anaesthesia or an intravenous anaesthetic and a muscle relaxant, suxamethonium being widely used despite several side-effects. Studies have shown that oral intubation can be facilitated safely and effectively in children after induction of anaesthesia with propofol and alfentanil without a muscle relaxant. Remifentanil is a new, ultra-short acting, selective μ -receptor agonist that is 20-30 times more potent than alfentanil. This clinical study was designed to assess whether combination of propofol and remifentanil could be used without a muscle relaxant to facilitate tracheal intubation in children. **Methods:** Forty children (5-10 years) admitted for adenotonsillectomy were randomly allocated to one of two groups to receive remifentanil 2 microg.kg(-1) (Gp I) or remifentanil 3 microg.kg(-1) (Gp II) before the induction of anaesthesia with i.v. propofol 3 mg.kg(-1). No neuromuscular blocking agent was administered. Intubating conditions were assessed using a four-point scoring system

based on ease of laryngoscopy, jaw relaxation, position of vocal cords, degree of coughing and limb movement. Mean arterial pressure (MAP) and heart rate (HR) measured noninvasively before induction of anaesthesia to 5 min after intubation (seven time points).

Results: Tracheal intubation was successful in all patients without requiring neuromuscular blocking agent. Intubating conditions were clinically acceptable in 10 of 20 patients (50%) in Gp I compared with 18 of 20 patients (90%) in Gp II ($P < 0.05$). MAP and HR decreased in both groups after induction of anaesthesia ($P < 0.01$). Both HR and MAP were significantly lower in Gp II compared with Gp I after tracheal intubation ($P < 0.01$). No patient in the present study developed bradycardia or hypotension.

Conclusions: We conclude that remifentanyl (3 microg.kg(-1)), administered before propofol (3 mg.kg(-1)) provides acceptable tracheal intubating conditions in children, and completely inhibited the increase in HR and MAP associated with intubation.

Lactic Acidosis and Developmental Delay due to Deficiency of E3 Binding Protein (Protein X) of the Pyruvate Dehydrogenase Complex

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Summary: Pyruvate dehydrogenase deficiency is an important cause of primary lactic acidosis. Most cases occur as a result of mutations in the gene for the E1alpha subunit of the complex, with a small number resulting from mutations in genes for other components, most commonly the E3 and E3-binding protein subunits. We describe pyruvate dehydrogenase E3-binding protein deficiency in two siblings in each of two unrelated families from Kuwait. The index patient in each family had reduced pyruvate dehydrogenase activity in cultured fibroblasts and no detectable immunoreactive E3-binding protein. Both were homozygous for nonsense mutations in the E3-binding protein gene, one involving the codon for glutamine 266, the other the codon for tryptophan 5.

Myiasis in Kuwait: Nosocomial Infections caused by *Lucilia Sericata* and *Megaselia Scalaris*

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Myiasis, the invasion of live human tissue by larvae of Diptera, is reported in the nasopharynx and a leg wound in two patients who were hospitalized for more than 72 hours in Mubarak Al-Kabeer Teaching Hospital in Kuwait City, Kuwait. On the fourth and fifth days after a 10-year-old Kuwaiti boy was admitted to the hospital intensive care unit in a bloodied and comatose state following a traffic accident, 'worms' that came out of his nostrils were fixed, cleared, and identified as second and third instar of *Lucilia sericata* (Diptera: Calliphoridae). After 14 days, 'worms' were seen in the original dressing of a 35-year-old Iranian man admitted to the Orthopedic Unit of the hospital with multiple lacerations and fractures. The larvae, in various stages of development, were identified as those of *Megaselia scalaris* (Diptera: Phoridae). Since the presence of larvae in both patients was recorded after a stay of at least 3-4 days in the hospital, by definition, these infestations are considered nosocomial.

Pattern of Antibiotic Prescription in the Management of Oral Diseases among Dentists in Kuwait

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Objectives: The use and abuse of antibiotics have been of concern to the medical and the dental profession for sometime now, due mainly to the emergence of antibiotic-resistant bacteria. The objective of this project was to determine the rationale and the pattern of antibiotic prescription for dental management in Kuwait.

Methods: A questionnaire was distributed to 200 dental practitioners working in the Ministry of Health dental centers in Kuwait. The questionnaires sought answers to the clinical and non-clinical factors; signs, clinical conditions and dental treatment modalities for which the practitioners would prescribe antibiotics.

Results: Of the 200 questionnaires sent out, 168 (84%) respondents returned fully completed forms. A total of 107 (63.7%) of the respondents were males. Of respondents, 90% would prescribe antibiotics for patients with elevated body temperatures and evidence of systemic involvement, gross or diffuse facial swelling and closure of the eye due to inflammatory swelling. However, over 50% would prescribe antibiotics for cases with localized fluctuant swelling without any systemic involvement, while 59.6% would prescribe for patients with difficulty in swallowing as a result of an oral infection. Many respondents would consider antibiotic prescription for routine dental extraction, and for non-clinical reasons such as uncertainty of diagnosis, convenience, expectation of the patient and lack of time to treat immediately. Amoxicillin was the most frequently prescribed antibiotic. Higher knowledge regarding adequate indications for antibiotic use was associated with longer professional experience.

Conclusions: The results of this analysis suggest that there is lack of uniformity in the rationale for antibiotic use among dental practitioners in Kuwait. There is an urgent need for the formulation of evidence-based guidelines, which should take into account the peculiar behavioral characteristics of the community.

Human Leukocyte Antigen-DQB1 Alleles are not Associated with Schizophrenia in Kuwaiti Arabs

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Schizophrenia is among the most severe and debilitating of psychiatric disorders and has a complex mode of inheritance. A susceptibility locus has been identified on chromosome 6 and some association studies involving human leukocyte antigen (HLA) genes have reported diverse results. The objective of the present study was to determine if there is an association between HLA-DQB1 alleles and schizophrenia in Kuwaiti Arabs. The frequency of HLA-DQB1 alleles was determined in a cohort of 195 Kuwaiti Arabs consisting of 81 schizophrenia patients and 114 ethnically matched healthy controls, using a polymerase chain reaction-sequence specific primers method. A total of nine DQB1 alleles were identified in this Kuwaiti cohort. The most prevalent DQB1 alleles in Kuwaiti schizophrenia patients were *0601 (28%), *0201 (23%) and *0501 (16%) respectively. However, no significant difference in the allele frequency was detected between schizophrenia patients and the controls. The DQB1*0602 allele, which has been negatively associated in African-Americans in previous reports, was not detected in the present Kuwaiti schizophrenia patients or controls.

Association of Serum Sialic Acid with Cardiovascular Metabolic Risk Factors in Kuwaiti Children and Adolescents with Type 1 Diabetes

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The aim of the present study was to investigate the relation of serum total sialic acid (TSA) concentrations with cardiovascular metabolic risk factors in Kuwaiti children and adolescents with uncomplicated type 1 diabetes. This case-control study included 150 (57 males and 93 females) type 1 diabetic children aged 6 to 18 years matched by age and sex to 150 nondiabetic children as controls. Measured variables included weight, height, systolic, diastolic blood pressure, and biochemical variables: blood glucose, glycosylated hemoglobin (HbA_{1c}), triglycerides (TG), total cholesterol (TC), high-density lipoprotein cholesterol (HDL), apolipoproteins (apo) A1 and B, and urine microalbumin. There was no significant difference between mean serum TSA of the type 1 diabetic children (671.0 mg/L) and their controls (663.7 mg/L). In diabetic children, mean serum TSA was significantly higher in females (699.1 mg/L) than in males (625.2 mg/L) ($P = .003$). Significant correlations were found between serum TSA and the cardiovascular risk factors TC ($P = .002$), TG ($P < .001$), and apo B ($P = .008$). TSA mean level was significantly higher in diabetic children with poor glycemic control (HbA_{1c} > 9.0%; $P = .015$), raised TC ($P = .013$), raised TG ($P = .014$), and in children with family history of cardiovascular disease (CVD; $P = .02$). In conclusion, the study suggests that serum TSA levels were not elevated in young type 1 diabetic children as compared with controls. The study also confirmed significant correlation of TSA concentrations with CVD risk factors TC, TG, and apo B, and as such serum TSA may be considered as a marker for CVD risk, especially in diabetic patients. A long-term prospective study is recommended to ascertain the longitudinal relationship of serum TSA with the adverse metabolic changes in type 1 diabetic children as complications prevail.

Clinical Characteristics and Pathological Classification of Non-Hodgkin's Lymphoma in Kuwait. Results of a Collaborative Study with the International Lymphoma Study Group (ILSG)

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Kuwait was chosen by the International Lymphoma Study Group (ILSG) as one of the sites attending in the project on "Clinical characteristics and pathological classification of non Hodgkin's lymphoma (NHL) in the developing countries". The Kuwait study involved 206 cases of NHL, diagnosed, staged and treated in the Kuwait Cancer Control Center (KCCC). All cases were reviewed and reclassified independently by the pathologists of KCCC and the International Lymphoma Study Group (ISLG) using the latest World Health Organization (WHO) classification of neoplastic disease of the hematopoietic and lymphoid tissues. Immunophenotyping as to B- or T-cell was documented in all cases. Three main pathological entities (diffuse large B-cell lymphoma, follicular lymphoma, peripheral T-cell lymphoma) were identified and studied thoroughly. The intense cooperation between experts of the ISLG and pathologists of the KCCC proved that the WHO classification was fully reproducible in Kuwait. The high incidence of extranodal lymphomas (53%) observed in the KCCC may not be due to special ethnic or environmental conditions in Kuwait but rather be due to a selection of patients coming to our center. Copyright 2004 Taylor and Francis Ltd

A Registry of Acute Myocardial Infarction in Kuwait: Patient Characteristics and Practice Patterns

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Background: Coronary artery disease is the leading cause of death in Kuwait, yet data about patient characteristics and practice patterns are lacking.

Objectives: To establish a registry of all acute myocardial infarction (AMI) cases admitted to the general hospitals in Kuwait, so that the characteristics and management patterns of patients with AMI could be accurately determined.

Methods: For six consecutive months, all patients with AMI admitted to the coronary care units of the five participating hospitals were prospectively included in the registry. **Results:** Of the 662 patients, 87% were men. The mean age was 55 years. A history of diabetes, hypertension and current smoking was found in 41%, 35% and 49% of patients, respectively. A history of hypercholesterolemia or a fasting cholesterol of 5.2 mmol/L or greater was found in 56% of patients. Eighty per cent suffered ST-segment elevation AMI. Four hundred seventy-six patients who were eligible for thrombolytic therapy were identified, 12 (3%) of whom did not receive it. The median time from diagnostic electrocardiogram to thrombolytic therapy was 45 min. The rate of prescribing acetylsalicylic acid, beta-blockers, angiotensin-converting enzyme inhibitors and statins at discharge among survivors was 98%, 86%, 51% and 50%, respectively. The in-hospital mortality rate was 6.2%.

Conclusions: The Kuwaiti AMI population is young, with high rates of diabetes, smoking and hypercholesterolemia. The majority of patients have ST-segment elevation AMI. Thrombolytic therapy is appropriately used, but measures need to be introduced to decrease the time to treatment. The rate of use of acetylsalicylic acid and beta-blockers was appropriate, while that of angiotensin-converting enzyme inhibitors and statins needs to be improved.

MRI follow-up and Natural History of Avascular Necrosis of the Femoral Head in Kuwaiti Children with Sickle Cell Disease

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Purpose: To document the MRI progression and the natural history of avascular necrosis of the femoral head (AVNFH) in Arab children with sickle cell disease. **Patients And Methods:** Twenty-three SS and 7 SbetaThal patients (aged 6-17 years) were screened for AVNFH between 1998 and 1999. Eight (26.7%) were identified with varying degrees of AVNFH. Seventeen of the original 30 patients have now been followed for 1 to 4 (mean 2.0 +/- 1.2) years, with repeat MRI of the hips. Spin-echo T1- and T2-weighted images and T2 fat-saturation sequences were obtained using a 1.5-Tesla GE unit with superconductors. AVNFH was graded I (mild), II (moderate), or III (severe).

Results: Eleven (64.7%) of the 17 patients had significant progression of their lesions; at the initial study, 9 were normal, 7 were grade I, 1 was grade II, and none was grade III. At the end of the follow-up period, two were normal, seven were grade I, one was grade II, and seven were grade III. Of the nine who were initially normal, two still had no lesions, while four were grade I and three were grade III on follow-up. Of the seven who were classified as grade I initially, four remained at grade I, one moved to grade II, and two became grade III. The one patient who was initially grade II progressed to III. **Conclusions:** AVNFH is a common, chronic, and unrelenting complication in children with sickle cell disease, and it is usually progressive.

Characterization of High-Level Aminoglycoside-resistant Enterococci in Kuwait Hospitals

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This study investigated the distribution of genes for aminoglycoside-modifying enzymes (AME) and the genetic relatedness of high-level aminoglycoside-resistant enterococci isolated in Kuwait hospitals. A total of 117 enterococci, consisting of 109 *Enterococcus faecalis*, seven *Enterococcus faecium*, and one *Enterococcus casseliflavus* were studied. The MICs of gentamicin, kanamycin, amikacin, tobramycin, and streptomycin were determined by agar dilution and the genes encoding the AAC(6')-APH(2''), ANT(4'), APH(3'), APH(2'')-Ib, APH(2'')-Ic, APH(2'')-Id, and ANT(6) enzymes were amplified by PCR. They were typed by pulsed-field gel electrophoresis (PFGE). Filter mating was used to transfer gentamicin resistance determinants. They were all resistant to kanamycin (MIC 2000 mg/L). Fifty-five isolates were resistant to gentamicin (MIC 500 mg/L), 72 were resistant to tobramycin (MIC 64 mg/L), 115 were resistant to amikacin (MIC 64 mg/L), and 97 were resistant to streptomycin (MIC 1000 mg/L). The *aac(6')-Ie-aph(2'')-Ia* was detected in all isolates with gentamicin MIC 500 mg/L and in 15 isolates with gentamicin MIC 256 mg/L. The *aph(3')-IIIa* gene was detected in 101 isolates, whereas the *ant(6')-Ia* gene was detected in 85 of the 97 streptomycin-resistant isolates with MIC 1000 mg/L. The *aac(6')-Ii* gene was detected only in the seven *E. faecium* isolates. None of them contained *ant(4')-Ia*, *aph(2'')-Ib*, *aph(2'')-Ic* and *aph(2'')-Id*. PFGE revealed heterogeneous patterns with no dominant clone. The results demonstrated that AME are common in aminoglycoside-resistant enterococci isolated in Kuwait. However, the absence of a dominant clone suggests that they acquired high-level aminoglycoside independently.

Chromosome Aberrations in De Novo Acute Myeloid Leukemia Patients in Kuwait

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Cytogenetic analysis was successfully performed at the time of diagnosis in 45 patients with de novo acute myeloid leukemia, including 10 children and 35 adults. In approximately 73% of AML patients (35 patients) clonal chromosome abnormalities were detected at the time of diagnosis. Twelve patients (22.8%) had apparently normal karyotypes. Recurring aberrations found in 22 of patients with abnormal karyotypes included $t(15;17)(q22;q11)$, $t(8;21)(q22;q22)$, $inv(16)(p13q22)$, trisomy 8, monosomy 7 and $del(5q)$. The highest frequency of chromosome changes was observed in AML-M3. The occurrence of the classical cytogenetic abnormalities was not a ubiquitous phenomenon. In 11 patients previously not described miscellaneous clonal chromosomal abnormalities were detected. Clonal chromosomal abnormalities detected in AML have shown correlations between specific recurrent chromosomal abnormalities and clinico-biological characteristics of the patients, therefore have been repeatedly shown to constitute markers of diagnostic and prognostic significance. Moreover, ongoing cytogenetic analysis can identify new nonrandom chromosome aberrations in AML and contribute to the identification of novel genes involved in the development of cancer, which can lead to better understanding of the disease pathogenesis.