

Selected Abstracts of Articles Published Elsewhere by Authors in Kuwait

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Iodine Status among Pregnant Women in Kuwait

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Up to now, little has been known about iodine intake and the prevalence of iodine deficiency (ID), if any, in Kuwait. Urinary iodine excretion (UIE) and changes in thyroid function during pregnancy were thus evaluated.

Methods: Urinary iodide level was measured in random urine samples collected from 326 pregnant women at different gestational trimesters. Blood samples were drawn for free T4 (FT4) and TSH level determination.

Results: Median UIE levels fall within the normal range during all gestational trimesters i.e. >100 microg/l. However, if the new suggested recommendation for pregnant women <140 microg/l, is applied, median UIE values during trimesters 2 and 3 indicate ID. Mean serum TSH levels increased between trimesters 1 and 3 ($p < 0.05$), whereas serum FT4 decreased between first and second trimesters ($p < 0.05$), and this reduction continued at the third trimester. Furthermore, an increase in TSH levels for subjects with mild and moderate ID (Mi and Mo, respectively) were noticed ($p < 0.05$) during the second trimester. However, FT4 levels dropped in subjects with Mi and Mo ID during the first trimester ($p < 0.05$). In conclusion, these results suggest that 56.8% of pregnant women had median UIE level <145 microg/l, associated with high TSH and low FT4 levels.

Conclusion: Data obtained may indicate insufficient iodine intake among pregnant women in Kuwait.

Death Anxiety in Kuwaiti Middle-aged Personnel

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The present study aimed to examine the level of death anxiety, the sex-related differences among a middle-aged Kuwaiti personnel sample, and to explore the replicability of the Arabic Scale of Death Anxiety (ASDA) factors. A sample of 236 volunteer Kuwaiti personnel took part in the study. The mean ages of men and women were 41.5 (SD = 7.5) and 40.9 (SD = 7.1), respectively. The alpha reliability of the ASDA was found to be high (.93). Women had a significantly higher mean total score on the ASDA as well as on 17 out of its 20 items. Middle-aged personnel had a significantly lower mean ASDA total score than younger college students (M age = 22). The factor analysis of the ASDA items yielded three factors: fear of dead people and tombs; fear of postmortem events; and fear of lethal disease. These factors were highly replicable with previous factors extracted from a Kuwaiti college student sample. On the basis of the present findings, there are three general conclusions as follows: death anxiety is negatively associated with age; the sex-related differences on death anxiety are salient in the Arab samples; and the ASDA has a highly replicable factor structure.

Implications of Streptococcus Pneumoniae Penicillin Resistance and Serotype Distribution in Kuwait for Disease Treatment and Prevention

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Streptococcus pneumoniae causes serious infections. Treatment is difficult because of the emergence of penicillin resistance in *S. pneumoniae*. Pneumococcal vaccines offer the promise of control and prevention of pneumococcal infections. Serotype prevalence and penicillin susceptibility data for a country will predict the usefulness of the vaccines in that country. In Kuwait, the 23-valent polysaccharide and the 7-valent conjugate vaccines are being used without knowledge of the prevalent serotypes in the country. To obtain the necessary background information, data on penicillin susceptibility and serogroups were obtained from 397 consecutive clinical isolates collected during 2004 and 2005. Two hundred fifty-three isolates (64%) were penicillin resistant, and resistance was significantly higher in patients ≤ 15 years old and among the upper respiratory tract and eye isolates. The most common serotypes were 23F, 19F, 6A, 6B, 14, and 19A. Among the penicillin-resistant strains, the most common serotypes were 23F, 19F, 6B, 14, and 9A. Among the invasive strains, the most common serotypes were 14, 23F, 19A, and 9V. The polysaccharide vaccine gave 82% coverage against invasive infections in all age groups >2 years. The coverage of the 7-valent conjugate vaccine against invasive serotypes in children ≤ 2 years old was 55%. This moderate coverage by the conjugate vaccine against invasive infections in children necessitates a revised strategy on the use of the present conjugate vaccine and shows the need for formulation of an improved vaccine for superior coverage for Kuwait and possibly other countries of the Arabian Gulf.

Extended-spectrum Beta-lactamase-producing Escherichia Coli Isolated in the Al-Amiri Hospital in 2003 and Compared with Isolates from the Farwania Hospital Outbreak in 1994-96 in Kuwait

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Extended-spectrum beta-lactamases (ESBLs) are a major problem in Kuwait and an accurate method for their detection is essential. This study was designed to evaluate the efficacy of the commercial system (Vitek 2) to identify ESBLs in clinical isolates of *Escherichia coli* and relate this to their identification by agar dilution methods for use in a diagnostic laboratory. The presence of the major ESBLs parental enzyme groups was confirmed by PCR and the similarity of the strains was determined by pulsed field gel electrophoresis (PFGE) on DNA, cleaved using *Xba*I endonuclease, to identify clonal spread. Seventy-one separate *E. coli* isolates from 65 patients were tested. Sixty-two isolates were from 56 patients from the Al-Amiri Hospital and nine isolates from neonates from Farwania Hospital. The isolates were screened for ESBL activity by the Vitek 2 system. Isolates showing positive results were further tested with Etest ESBL strips and by the disc approximation methods. All the isolates were flagged as ESBL-positive by the Vitek 2 advanced expert system (AES). Isolates from all the 65 patients were detected as ESBL positive by the Etest, only if both ESBL strips were used. The double disc approximation test using five different antibiotics could detect ESBL presence in isolates from only 46 patients. In this test, the synergy with cefepime was the most sensitive in ESBL detection, showing their presence in 41 isolates. PCR with primers for *bla*(TEM) and *bla*(SHV) demonstrated that one or both of these enzymes in all isolates. PFGE revealed that many different clones were present amongst the isolates. The epidemiology of ESBL *E. coli* in Kuwait is complex. Many distinct strains are already present in the population, as shown by the results of PFGE. Several testing methods may be required to detect all strains harboring ESBLs.

Regional Analysis of the Ependyma of the Third Ventricle of Rat by Light and Electron Microscopy

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Ependymal lining of cerebral ventricles lies at the interface between the ventricular cavities and the brain parenchyma. Ependymal cells are involved in various functions within the brain and play a major role in the production of the chemical principals of the cerebrospinal fluid. Histological studies on the regional variation of the third ventricular ependyma and the subependyma of adult rats were carried out by light and electron microscopic methods. For light microscopic analysis, methacrylate sections were used. In addition to the routine haematoxylin and eosin (H and E) staining for histological studies, the sections were stained with toluidine blue, cresyl violet and periodic acid Schiff's reagent (PAS). A regional analysis of the ependyma of the third ventricle showed that in most regions the ependyma was monolayered. The sidewalls and floor of the ventral portion of the third ventricle showed a multilayered ependyma. For descriptive purposes at the light microscopic level, the ependymal cells were classified, based on the cell shape (flat, cuboidal or columnar), presence or absence of cilia and the number of cytoplasmic granules present in the cells. Studies of transmission electron microscope have shown that these granules represent the cell organelles of the ependyma. The subependyma also showed a regional morphological variation, and, in most instances, contained glial and neuronal elements. In regions of specific brain nuclei, neurons were the major cell type of the subependyma. PAS staining did not show any positive granules in the ependymal cytosol. Characteristic supraependymal elements were present at the ependymal surface of the third ventricle.

Emergence of Multidrug-Resistant Salmonella Spp. and Isolates with Reduced Susceptibility to Ciprofloxacin in Kuwait and the United Arab Emirates

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Kuwait and United Arab Emirates (UAE) are 2 countries with worldwide significance in the context of global epidemiology of antimicrobial resistance. The extent of drug resistance in *Salmonella* spp. isolated from these countries was investigated by determining their susceptibility to 9 antibiotics using the E-test method. Amikacin, cefotaxime, ceftriaxone, ciprofloxacin, and gentamicin had excellent activities against all Kuwait and UAE isolates with MIC(90)s ranging between 0.056 and 4.5 µg/mL. The resistance rates in Kuwait and UAE to ampicillin were 26.5% and 17.1%, cefotaxime/ceftriaxone 1.6% and 1.6%, ciprofloxacin 1.2% and 0.8%, chloramphenicol 5.6% and 5.7%, and trimethoprim-sulfamethoxazole 26.1% and 8.9%, respectively. A total of 9.8% of the Kuwait isolates were multidrug resistant versus 4.1% of UAE isolates. Reduced susceptibility to ciprofloxacin was observed in 14.2% and 7.4% of the nontyphoidal *Salmonella*, respectively, as were in 44% of *Salmonella enterica* serovar typhi and 66.7% *Salmonella paratyphi*. *Salmonella* spp. with reduced quinolones susceptibility have emerged in the Gulf region, and this is of concern as it may compromise the treatment of infections caused by invasive strains