

Selected Abstracts of Articles Published Elsewhere by Authors in Kuwait

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HHV-6 DNAemia in Patients with Multiple Sclerosis in Kuwait

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Objective: To study the presence of active human herpesvirus type-6 (HHV-6) infection indicated by the presence of HHV-6 DNA in serum (DNAemia) in patients suffering from multiple sclerosis (MS) in Kuwait. **Material and methods-** Sera from 24 patients with MS (18 relapsing-remitting, six secondary progressive disease), control sera from 13 patients suffering from other neurological diseases and sera from 20 healthy volunteers were examined for the presence of HHV-6 DNA by nested polymerase chain reaction (PCR) test. **Results-** None of the MS patients, nor patient controls were positive for HHV-6 DNAemia while, one of the normal healthy controls was positive for HHV-6 DNAemia. **Conclusion-** HHV-6 DNAemia, indicating active HHV-6 infection could not be demonstrated in a sample of Kuwaiti patients suffering from active clinically definite MS. There is no evidence to incriminate this virus in the pathogenesis of MS in Kuwait.

High Survival Rate in Childhood Non-Hodgkin Lymphoma Without CNS Involvement: Results of BFM 95 Study in Kuwait

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Non-Hodgkin lymphomas (NHL) in children are the second most common malignant tumors in Kuwait. Until 1995 the patients (pts) received institutional protocols. From October 1995 to September 2000, 21 children with NHL were treated. Five children were treated by NHL BFM 90 protocol, 7 pts received NHL BFM 95 scheme, and 9 children underwent therapy abroad or according to different types of protocols. The results of a retrospective analysis of NHL BFM 95 protocol in Kuwait are reported. Seven patients diagnosed with NHL-group B: 3 children with Burkitt lymphoma (B-cell NHL) and group A: 4 children with lymphoblastic lymphoma (T-cell NHL)--were treated from October 1995 to September 2000 in the Kuwait Cancer Control Centre according to NHL BFM 95 protocol. Group B consisted of 2 girls and 1 boy; median age at diagnosis was 4 years 8 months, 2 pts classified as stage II and 1 pt as stage III. All patients were assigned to risk group R2. Median follow-up is 2 years 8 months. Group A included 1 girl and 3 boys; median age at diagnosis was 5 years 8 months, 1 pt classified as stage III and 3 pts as stage IV. All patients were assigned to IR group. Median follow-up is 3 years 6 months. In group B all 3 pts are in 1st CR; in group A 3 pts are in 1st CR and 1 pt having Li-Fraumani syndrome died after the 3rd relapse of disease during therapy. In both groups there was no toxic death, myelotoxicity WHO grade III-IV, hepatotoxicity WHO grade II-III. Treatment results of NHL BFM 95 study in our small group of patients are very optimistic. Six patients are in 1st CR and one died due to progression of disease. Despite the small group of patients, the results suggest that NHL BFM 95 protocol is highly effective and safe with regular supportive care.

Only Some Septicaemic Patients Develop Hypernatremia in the Burn Intensive Care Unit: Why?

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From April 1993 to January 2000, 105 patients in the burn intensive care unit (BICU) that developed septicaemia in the course of their treatment were studied retrospectively to investigate as to why only 36 septicaemic patients (34%) developed hypernatremia (serum sodium > 150mmol/l). Septicaemic burn patients who developed hypernatremia were found to have a higher incidence of inhalation injury and a larger burn area (TBSA) signifying greater free water losses in the face of increasing fluid requirements. Patients who developed hypernatremia showed a characteristic pattern of septicaemia: early onset, multiple episodes, polymicrobial, need for multiple antibiotics, longer duration and a higher mortality, indicating a more severe degree of sepsis. The level of incapacitation either from the burn itself, mechanical ventilation or from impaired mental status leading to an inadequate free water intake was more in septicaemic patients who developed hypernatremia. Increased urinary free water losses and solute diuresis from hyperglycemia were significant factors in the development of hypernatremia. Patients who were treated with early wound excisions were less prone to develop hypernatremia when compared to those who did not undergo early wound excision. The close association between the onset of hypernatremia and the onset of septicaemia noted in this study suggests the use of hypernatremia as a marker for septicaemia in burn patients. Hypernatremia in a septicaemic burn patient is multi-factorial and a thorough understanding of the underlying factors will help prevent the onset and progress of hypernatremia.

Species Prevalence and Antibacterial Resistance of Enterococci Isolated in Kuwait Hospitals

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This study investigated the species prevalence and antibacterial resistance among enterococci isolated in Kuwait hospitals. They consisted of 415 isolates of *Enterococcus faecalis* (85.3%), *Enterococcus faecium* (7.7%), *Enterococcus casseliflavus* (4.0%), *Enterococcus avium* (1.2%), *Enterococcus durans* (1.0%), *Enterococcus gallinarum* (0.5%) and *Enterococcus bovis* (0.2 %) isolated from urine (36.6 %), blood (10.4%), wound swabs (11.0%), stool samples (12.0%), high vaginal swabs (9.0%), endocervical swabs (3.0 %) and miscellaneous sources (18.0%). All of them were susceptible to linezolid. Fifty-two (12.5%) isolates were ampicillin resistant but none of them produced beta-lactamase. They were resistant to erythromycin (63.3 %), tetracycline (60.5%), ciprofloxacin (40.0%), chloramphenicol (28.0%), vancomycin (2.6%), and teicoplanin (2.6%). Fourteen, 19 and 20 % of them expressed high-level resistance to gentamicin, kanamycin and streptomycin, respectively. All of the vancomycin-resistant strains carried the vanA phenotype and genotype. There was no evidence of clonal spread of the vancomycin-resistant isolates.

The Aetiology and Pattern of Recurrent Pregnancy Loss

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The aims of this study were to determine the aetiological factors and the pattern of recurrent pregnancy loss in Kuwait. Ninety consecutive patients attending the special recurrent miscarriage clinic were studied prospectively. A comprehensive history of all previous miscarriages and pregnancies, past medical and gynaecological events were established. A physical examination was performed. Extensive investigations were performed. Pregnancies which occurred during the study were monitored carefully. The mean age of the patients was 30.46 ± 6.04 years. The patients were subdivided into the groups of secondary (57%) and primary (43%) recurrent miscarriages. Eighty-five per cent of all previous miscarriages occurred in the first trimester. The main aetiological factors were uterine anomaly 2.2%, chromosome anomaly (parental) 2.2%, PCOS, infections and other miscellaneous factors 21.1%, positive antiphospholipid antibodies 33.3% and unexplained in 35.6%. The overall live birth rate was 82% and maternal morbidity was low. Positive antiphospholipid antibodies are the most frequently associated cause of recurrent pregnancy loss in Kuwait.

15 Years in Surgical Management of Pulmonary Hydatidosis

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Ann Thorac Cardiovasc Surg 2002; 8:131-134

Objectives: Echinococcosis remains an endemic surgical problem in countries where sheep and cattle raising is carried out, particularly in many Mediterranean countries. This study aims to evaluate the management of different presentations of pulmonary hydatidosis and their outcome over 15 years.

Design: Retrospective study. **Setting:** Thoracic surgical department, Chest Diseases Hospital, Kuwait.

Patients: Sixty patients operated upon for hydatid disease were evaluated pre- and post-operatively; 35 males, 25 females with a mean age of 28.4 years. Most patients were investigated by laboratory, serological and radiological studies. Different surgical techniques were used to remove the hydatid cyst from the lung.

Results: The most common presenting symptoms were cough (41 patients), and 12 patients were asymptomatic. Chest X-ray showed a rounded shadow in 42 patients; 19 cases were of vigorous size >10 cm. Thoracotomy was done in 57 patients; two chest wall cases were managed by minimal skin incision and enucleation, one hydatid cyst of the heart was approached through a median sternotomy. The mean hospital stay was 9 days. Postoperative complications occurred in 9 patients; prolonged air leak in 4 patients, pleural effusion in 3, pneumothorax, and wound infection in one patient each. One patient (65 years old) died on the 6th post-operative day most probably from pulmonary embolism. In a follow-up period of 2-15 years, 4 recurrences have been noted.

Conclusion: Surgical excision of pulmonary hydatidosis with maximum preservation of the lung parenchyma is the main stay of treatment.

Septicaemia After Burn Injury: A Comparative Study

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Burns 2002; 28:746-51

Seventy-nine (8.4%) patients during June 1992-May 1996 (Group-1) and 68 (7.2%) patients from June 1996 to May 2000 (Group-2) who developed septicaemia at the burns unit of Al-Babtain Centre for Plastic Surgery and Burns, Kuwait, were retrospectively studied and compared. The mean age of 26 years, male predominance, flame burns as main aetiology and mean burn percentage of $> =40\%$ was observed in both the groups. Both groups revealed extensive flame burn, inhalation injury, intubation and difficult resuscitation as the risk factors. The proportion of satisfactory resuscitation increased significantly ($P < 0.001$) in Group-2. The septicaemia commonly occurred within 2 weeks postburn but the number of episodes during 5 days postburn was less in Group-2. The surface wound was found to be the likely source of entry of the organisms into the blood stream in both the groups. The gram positive organisms were dominant aetiological factor in both groups but an increase frequency of *Acinetobacter* was found in Group-2. The proportion of MRSE and *Pseudomonas* septicaemia was significantly higher ($P < 0.01$) in the Group-1. The rate of survivors, in both the groups was higher among operated patients but it was significantly higher ($P < 0.001$) in the Group-1. A mortality rate 20.6% in Group-2 decreased against Group-1, which can be attributed to better resuscitation, nutritional care, early detection of septicaemia, appropriate antibiotics and early wound excision and skin grafting. MOF was the cause of death of 60.9% in Group-1 and 85.7% in Group-2. There was no role of prophylactic antibiotic in burn patients in the incidence of septicaemia and mortality.

Drug-Resistant Plasmodium Falciparum Infection in Immigrants and Non-immune Travellers

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Clin Microbiol Infect 2002; 8:734-738

Objective: To detect the incidence of drug-resistant *Plasmodium falciparum* malaria infection in immigrants and travellers in non-endemic Kuwait.

Methods: Over a period of 3 years, July 1995 to September 1998, 1352 malaria patients were enrolled in the study. Of these, 1293 were immigrants from countries where malaria is endemic and 59 were non-immune travellers with a recent history of travel to these countries. The *in vitro* drug sensitivity was determined in 892 patients.

Results: In all, 892 of 1352 (66.0%) *P. falciparum* isolates were successfully cultured *in vitro* for drug sensitivity and 419 (47.0%) isolates showed *in vitro* resistance to chloroquine or mefloquine. Fifty-six (13.4%) isolates were resistant to both drugs. Chloroquine resistance was observed in $> 70\%$ of the isolates from Africa and India followed by Pakistan (39.9%) and Bangladesh (35.9%). The resistance to mefloquine ranged from 26.2% in isolates from Sri Lanka to 47.5% in isolates from African countries.

Conclusion: The study highlights the important trend in drug resistance in *P. falciparum* malaria in immigrants from south-east Asian and African countries.

In Vitro Activity of 15 Antimicrobial Agents Against Clinical Isolates of Clostridium Difficile in Kuwait

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Int J Antimicrob Agents 2002; 20:270-274

A total of 73 clinical isolates of *Clostridium difficile* isolated from stool/rectal swabs of patients admitted to the intensive care units at Mubarak Hospital, Ibn Sina Hospital Burn unit and Haematology wards at the Kuwait Cancer Control Centre, were investigated for their susceptibility to 15 antibiotics using the Etest. Amoxicillin-clavulanic acid, ampicillin, meropenem, metronidazole, penicillin, piperacillin, piperacillin/tazobactam, teicoplanin and vancomycin had excellent activities with MIC(90)s of 0.38, 0.5, 1, 0.19, 1.5, 2, 3, 0.25 and 0.75 mg/l, respectively. Of the 73 *C. difficile* isolates, 86% were resistant to imipenem (MIC(90) > 32 mg/l) and almost 97% were resistant to trovafloxacin (MIC(90) > 256 mg/l). Forty eight percent of the isolates were resistant to clindamycin. A total of 18 isolates were highly clindamycin-resistant with an MIC of > 256 mg/l; 10 of these were toxin producers. Multiple antibiotic resistance (two or more antibiotics) was noted in 63 isolates. These were more common among the toxigenic strains than the non-toxigenic strains by a ratio of 2.5:1.

Bilateral Video-Assisted Thoracoscopic Surgery for Bilateral Spontaneous Pneumothorax

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Chest 2002; 122:2234-2237

Objective: To review our experience with bilateral video-assisted thoracoscopic surgery (VATS) for the treatment of bilateral spontaneous pneumothorax (SP). **DESIGN:** Retrospective study followed by a telephone interview for follow-up.

Setting: Thoracic Surgery Department, Chest Diseases Hospital, Kuwait.

Patients and Interventions: Fifteen patients undergoing bilateral VATS for bilateral SP from 1994 to 1999.

Results: The mean age of the patients was 22.9 years (range, 17 to 34 years), and 14 were men. All patients were successfully treated using the bilateral video-assisted technique. Operative indications included simultaneous bilateral pneumothorax (n = 7) and contralateral recurrence of SP (n = 8). Twelve patients had primary SP. In the three remaining patients, simultaneous bilateral SP was secondary to sarcoidosis in two patients and histiocytosis X in one patient. Eleven patients had multiple blebs or bullae located in the upper lobes, and 4 patients had no blebs. All blebs or bullae were resected. All patients had gauze pleurodesis. The mean +/- SD operative time was 133.6 +/- 9.1 min. There were no perioperative complications and no deaths attributable to the procedure. Postoperative prolonged air leak occurred in three patients (20%). The mean drainage time was 3 days (range, 2 to 8 days). The mean postoperative hospital stay was 5 +/- 1.7 days. Mean follow-up was 3.3 years (range, 2 to 5 years) for all patients. Pneumothorax recurred in one patient with histiocytosis X after 1 month and required a reoperation on the right side.

Conclusions: Bilateral VATS is a safe procedure in the treatment of simultaneous and nonsimultaneous bilateral SP. This avoids the need for subsequent operations.

Survival of Cardiac Function after Brain Death in Patients in Kuwait

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Eur Neurol 2003; 49:90-93

Background: Persistent cessation of all cerebral and brainstem function (brain death) is accepted in most countries as legal evidence of death. It is presumed that cardiac function will cease within a short time after brain death has occurred. In some countries, such as Kuwait, tradition and practice discourage application of the brain death criteria despite legal acceptance.

Objective: The study was designed to assess the duration of persistence of cardiac function in patients after the diagnosis of brain death had been made on the basis of generally accepted criteria.

Methods: We evaluated how long cardiac function persisted after brain function had ceased in 40 patients in Kuwait who were admitted to hospital and died during the 10-year period 1992-2001.

Results: It was found that the mean persistence of cardiac function after brain death was 8.20 days and the median survival time was 6 days. Two thirds of the patients survived longer than a week, but none had cardiac function for longer than 30 days.

Conclusion: The study confirms that brain death is not automatically followed immediately by cessation of all other body functions. It may be speculated therefore that whole-body homeostasis is not as intimately associated with brain function as has hitherto been thought.

Molecular Fingerprinting of Isoniazid-Resistant Mycobacterium Tuberculosis Isolates from Chest Diseases Hospital in Kuwait

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Touchdown double-repetitive-element-PCR (DRE-PCR) was carried out for typing 38 consecutive isoniazid-resistant Mycobacterium tuberculosis strains isolated at Chest Diseases Hospital, Kuwait, during 1998-2000. The polymorphism at codon 463 in the katG gene was also determined and correlated with genotypic relationships among the isolates. The isolates exhibited 21 distinct patterns in DRE-PCR. Nearly half of the isolates (18 of 38) exhibited unique patterns. Majority of isolates (16 of 20) yielding multiple DNA fragments in DRE-PCR were unique strains while most of the isolates (16 of 18) yielding a single DNA fragment in DRE-PCR clustered together. The prevalence of L463 in the katG gene was much higher in isolates from Middle Eastern (mostly Kuwaiti) patients than is reported for this ethnic group. The data indicate the possibility of some strains of South Asian/Southeast Asian origin spreading among local populations.