

Background. Human papillomavirus (HPV) is documented to be a causative agent of cervical cancer and detection rates of more than 90% were registered in some parts of the world. This study was undertaken to introduce polymerase chain reaction (PCR) for diagnosing HPV infection in women with different cervical lesions for the first time in Kurdistan region and to define the most prevalent high-risk (HR) genotypes (HR HPV).

Methods. Eighty women (aged 25–70 years) with different cervical lesions, cytologically classified as ASC-US ($n = 20$), CIN I ($n = 30$), CIN II–III ($n = 16$), and cervical carcinoma ($n = 14$) and 20 healthy individuals (control group) were enrolled in this study. PCR screening kits were used to extract the entire genomic DNA from cervical cells scraped from cases and then PCR HR HPV genotyping kits were used to test the positive samples.

Findings. HPV DNA was detected at an estimated rate of 17.5% in the cases but was absent in the control group. In the cases, the detection rate of HPV DNA was 1.25% (1 of 20), 3.75% (3 of 30), 5.0% (4 of 16), and 7.5% (6 of 14) in the cytological categories ASC-US, LSIL (CIN-I), HSIL (CIN-II–III), and cervical cancer, respectively. Moreover, the results of this study showed the detection of seven HR HPVs 16, 52, 56, 35, 45, 39, and 33 at frequency rates of 28.4%, 21.4%, 14.3%, 14.3%, 7.1%, 7.1%, and 7.1%, respectively. Therefore, HPV 16 was the most commonly detected HR HPV genotype among the positive cases (28.4%).

Interpretation. This is the first PCR study done in the Kurdistan region. The detected rate of HPV DNA (17.5%) in this region verifies the use of PCR. Moreover, the detected rate of HPV infection correlated with the severity of the cytological findings and HPV 16 was the most commonly detected HR genotype among positive cases (28.4%). Knowing the rate of HPV infections and the HR genotypes are of utmost importance for HPV vaccine introduction, which is not yet scheduled in this region and other parts of Iraq.

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AOS5 CLINICAL AND BACTERIOLOGICAL SPECTRA OF NEUTROPENIC SEPSIS IN PATIENTS WITH CANCER TREATED AT A TERTIARY CARE CENTRE IN KASHMIR VALLEY

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Background. This prospective study was done to define the clinical and bacterial profiles in patients with cancer who had febrile neutropenia with changing bacteriological and sensitivity (and resistance) patterns.

Methods. All the patients with cancer and febrile neutropenia who were hospitalised from August 2007 till September 2009 were studied. They were assessed to identify the cause and outcome of sepsis and production of extended-spectrum beta-lactamase (ESBL).

Findings. A total of 170 febrile episodes in 138 neutropenic inpatients were investigated. Number of episodes of febrile neutropenia were 1 in 111 (80%), 2 in 22 (16%), and 3 in 5 (4%) patients. Leukaemia (in 124 episodes of febrile neutropenia) was the major diagnosis. Lymphomas and other solid malignancies were seen in 18 and 28 episodes respectively. Fifty-two (31%) cultures were positive for Gram-positive organisms in 30 febrile episodes and Gram-negative organisms in febrile episodes (ratio: 1.3/1). The organisms grown were *Staphylococcus aureus* in 14 episodes (26.92%), coagulase-negative staphylococci in 11 episodes (21.15%), *Enterococcus* in three episodes (5.7%), *Pneumococci* in two episodes (3.8%), *Escherichia coli* in eight episodes (15.38%), *Klebsiella* in eight episodes (15.38%), *Pseudomonas* in three episodes

(5.7%), *Acinetobacter* in two episodes (3.8%), and *Citrobacter* in one episode (1.9%). 20/22 Gram-negative isolates showed ESBL production. Culture positivity was 41.02% in moderate, 24.32% in severe, and 12.72% in profound neutropenia cases; the difference was significant between moderate and profound groups (p value < 0.001). Mean neutrophil count at defervescence was $642/\text{mm}^3$. Early (< 7 days) neutrophil recovery occurred in 21.16% of patients with moderate neutropenia, in 6.1% with severe neutropenia, and 5.9% with profound neutropenia. The differences were significant (p value < 0.001).

Interpretation. Most of the bacteria grown in this study were Gram positive. Predominance of ESBL-producing organisms was particularly notable. Neutrophil counts can be used to predict the rate of recovery and response to treatment in neutropenic patients.

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AOS6 ASSOCIATION OF ALPHA B-CRYSTALLIN GENOTYPES WITH ORAL CANCER SUSCEPTIBILITY, SURVIVAL, AND RECURRENCE IN TAIWAN

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Background. Alpha B-crystallin (CRYAB) is a protein that functions as a molecular chaperone in preserving the intracellular architecture and cell membrane, and is highly antiapoptotic. Abnormal CRYAB expression is prognostic for oral cancer, but its genomic variations and the association with carcinogenesis have never been studied. Therefore, we hypothesised that CRYAB single nucleotide polymorphisms might be associated with risk of oral cancer and investigated the association of CRYAB A-1215G (rs2228387), C-802G (rs14133), and intron2 (rs2070894) polymorphisms with oral cancer in a Taiwanese population.

Methods. In this hospital-based study, 496 patients with oral cancer and 992 age-matched and sex-matched healthy controls were genotyped and analysed.

Findings. A significantly different frequency distribution of CRYAB C-802G genotypes, but not A-1215G and intron2 genotypes, was noted between the oral cancer and control groups. The CRYAB C-802G G allele conferred an increased risk of oral cancer ($p = 1.4961025$). Patients with CG/GG at CRYAB C-802G had lower 5-year survival and higher recurrence rates than did those with CC ($p < 0.05$).

Interpretation. Our results provide the first evidence that the G allele of CRYAB C-802G is associated with risk of oral cancer and this polymorphism might be a useful marker for oral cancer recurrence and survival prediction.

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AOS7 ROLE OF CRYOTHERAPY IN MULTIDISCIPLINARY MANAGEMENT OF ENDOBRONCHIAL METASTASES

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Background. Metastases to the bronchial tree from extrapulmonary malignancies can cause significant symptoms that preclude systemic

treatment of the primary disease. The aim in this study was to assess the role of cryotherapy as part of a multidisciplinary treatment in patients with endobronchial metastases.

Methods. Between 1995 and 2011, 35 patients (23 men; age range 22–80 years) with endobronchial metastases (11 colorectal, 11 renal, 4 oesophageal, 9 other) received endobronchial cryotherapy under general anaesthetic via a rigid and fiberoptic bronchoscope (temperature 70 °C; exposure to probe 240 s, number of freezing cycles 1–4, number of procedures 1–5) as part of the multidisciplinary treatment for the primary tumour. The main presenting symptom was dyspnoea in 14, stridor in 9, haemoptysis in 7, and cough in 5 patients.

Findings. There were no peri-operative or in-patient deaths. Endobronchial cryotherapy was undertaken as a day-case procedure in more than 80% of cases.

Survival from starting cryotherapy was from 10 days to 4 years and 8 months, with a median of 34 weeks. Twenty-two patients reported a significant improvement in their main presenting symptom. In half the patients, endoluminal patency was increased by 50% or more after cryotherapy. Improvement allowed the majority of the patients to continue systemic treatment of their primary tumour.

Interpretation. Endoluminal cryotherapy is a safe and effective treatment modality in patients with symptoms secondary to endobronchial metastases. Cryotherapy gives rapid resolution of symptoms and can be undertaken as a day-case procedure in most patients. It improves the patient's condition, permitting systemic treatment of the primary tumour.

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AOS8 EFFECTIVENESS OF AN EDUCATION-COMBINING EXERCISE PROGRAMME FOR CHEMOTHERAPY-RELATED FATIGUE IN WOMEN WITH BREAST CANCER

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Background. In Thailand, breast cancer ranks the highest among all types of cancers and the number of cases is likely to continue increasing each year. Postsurgical chemotherapy to prevent cancer metastasis and eradicate cancer cells is associated with a favourable outcome. Despite its efficiency, the effects of the chemotherapy on various organ systems affect patients physically, cognitively, emotionally, and socially. Chemotherapy-related fatigue (CRF) occurs in 80–100% of patients with cancer during their chemotherapy and can affect their quality of life.

Methods. In this study we aimed to assess the effect of an education-combining exercise programme on fatigue in 40 patients with cancer who were given chemotherapy ($N=40$). Twenty patients were assigned to an education-combining exercise programme (experimental group) and 20 were assigned to normal medical treatment (control group). The patients and the research assistant were not aware of group assignments. The experimental instruments consisted of handbooks and pamphlet about chemotherapy-related fatigue and exercise practice. The data were analysed and presented using percentage, mean, standard deviation, Chi-square, and repeated measures analysis of variance (ANOVA).

Findings. The education-combining exercise programme significantly reduced the fatigue.

Interpretation. These results suggest that the cause of CRF is multifactorial and lends support to the use of the education-combining exercise programme. The use of this programme should be encouraged and

a standard manual should also be provided to help nurses in providing advice to patients.

The authors declared no conflicts of interest.

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AOS9 MORTALITY IN CHILDREN OF WOMEN DIAGNOSED WITH CANCER: A POPULATION BASED COHORT STUDY

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Background. With increasing risks of cancer and improving chances of survival, an increasing number of female survivors are starting or extending their family post-diagnosis. The mortality risks in the offspring of mothers with a history of cancer were evaluated.

Methods. From the Swedish Multi-generation Register and the Cancer Register, we identified all 174,893 children whose mothers had been diagnosed with invasive cancer between 1958 and 2001. For these children, we calculated relative risks of death (standardised mortality ratios, SMRs) compared with the background population and assessed trends in SMRs.

Findings. With the exception of offspring of mothers with tobacco-related cancers (head and neck, thoracic, cervical; SMR 1.23 [95% confidence interval (CI) 1.13–1.33]), offspring of mothers with a history of cancer did not have increased mortality risk (SMR 1.00 [95% CI 0.97–1.03]). Children born within 1 year of their mother's diagnosis had an increased mortality risk (SMR 1.66 [95% CI 1.25–2.13]), particularly if their mother was primiparous at diagnosis of breast cancer (SMR of 11.07 [95% CI 2.09–27.13]). Offspring born more than 1 year after their mother's diagnosis of haemopoietic cancer were also at increased risk of death (SMR 2.07 [95% CI 1.10–3.35]).

Interpretation. Timing of childbirth in relation to the mother's diagnosis and type of cancer modifies mortality risks in the offspring. The increased mortality risk in children conceived around the time of the mother's diagnosis suggests a negative effect of the cytotoxic treatment on the offspring, which primiparous women are more likely to accept than women who have given birth before. Despite the high relative risks, absolute increases in mortality risks are small.

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AOS10 PROGNOSTIC FACTORS FOR PATIENTS WITH LEP-TOMENINGEAL METASTASES FROM SOLID TUMOURS

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