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ORAL PRESENTATIONS

Basic Science and Translational Research

Cervical cancer screening: Role of serotyping of HPV as bridge of cytopathology and molecular typing?

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Aims: The aims of this study are to determine the prevalence of HPV infection and distribution of HPV genotypes in cervical cancer patients and also in women of age group 18-60 years and thereby estimate their role in cervical cancer screening and vaccination programs. The aim is also to have some insights in understanding the role of HPV serotyping, if any, in cervical cancer screening program. **Materials and Methods:** We analyzed 91 tissues from histological proven cervical cancer cases from Apollo Health City Cancer Hospital to evaluate the prevalence of HPV using GP5+/GP6+primers. All the samples which were positive for HPV were typed, using type specific primers HPV 16 and 18. The cervical scraps from about 500 women with age group 18- 60 were also processed to estimate HPV prevalence and type distribution. Serology of HPV was done as preliminary study, using GST capture ELISA at Indian Immunological Limited, from 21 samples of normal women and same number from cervical cancer patients. **Results:** Our results revealed that all the samples analyzed from cancer population except one, and 19% of normal women, is found to have HPV infection. About 80% of cancer patients were positive for HPV 16 and 2% are positive for HPV 18 and almost similar results were observed in normal population. As far as serology results are concerned, the serum antibody titer of HPV 18 was higher than HPV16 among cancer patients. The serum antibody titers were found to be significantly higher (2-3 log folds higher) from the cancer patients than normal women population. **Conclusions:** Our results confirm that HPV 16 is the most common type followed by HPV18 in cervical cancer and also in general population as found in other studies in India. As far as HPV serology results are concerned, it may have role as predictor for infection status, provided the serological assays are rigorously validated.

Genotype and phenotype correlation analysis in retinoblastoma

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Aim: Retinoblastoma (Rb), the most common intraocular malignant tumor in children has unraveled many of the mysteries of tumor biology, but still leaves us with few unanswered questions. In this study we have attempted a genotype-phenotype correlation in patients seen at a tertiary eye care centre in Southern India. **Materials and Methods:** Genomic DNA from blood samples of 70 Rb patients was evaluated for mutations using a comprehensive approach using PCR-RFLP, UPQFM-PCR (universal primer quantitative fluorescent multiplex PCR) and sequencing. Mutations were classified as large deletions or duplications; small deletions and insertions; and point mutations. Medical records of these patients were reviewed specifically for clinical grouping (International Classification of Intraocular Rb), treatment modalities, and the clinical outcome. **Results:** Of 53 bilateral Rb patients evaluated, mutations were detected in 41 (77%) patients. In the group of 20 patients with deletions (large deletions in 8; small deletions in 12), 13 had Group E Rb (33%). Histopathological risk factors (HRF) were seen in 5 of the 12 eyes that were enucleated. All the patients in this group were alive and well during the study period. In the group of 10 patients with nonsense mutations, Group E Rb was noted in 25% (5 of 20 eyes) and HRF in 2 of 7 enucleated eyes. All the patients in this group were alive and well during the study period. In 6 patients with splice site mutations, Group B and Group D Rb were noted in 8 eyes and enucleation performed in one. In this group, 5 of 6 patients on follow-up were disease free. Four patients with missense mutations had Group B Rb in 3 eyes; enucleation was performed in 4, of which 1 had HRF. All the patients in this group were alive and well during the study period. In 12 patients with no mutation, 13 (54%) eyes had Group D tumor and 9 (38%) eyes were enucleated. All the patients in this group were alive and well during the study period. In 17 patients with unilateral Rb, germline mutation was identified in 6 (35%) patients. The mutations included large deletions in 3; nonsense mutation in 1; splice site mutation in 1; and missense mutation in 1. Group E Rb was seen in 5 eyes (83%) and 4 eyes were enucleated (67%). Of the 11 patients with unilateral Rb where no mutation was identified, 8 (73%) eyes had Group E Rb and 9 eyes were enucleated (82%). Survival analysis of 13 patients available for follow-up showed 11 alive and well, 1 alive with metastasis and 1 died of metastasis. **Conclusion:** The present study indicates that genetic mutations involving deletions (large and small) are associated with relatively advanced disease at presentation (Group E), and higher rate of enucleation, both in bilateral and unilateral patients. Unilateral Rb interestingly showed mutations in 35% of patients. Long-term survival studies are required to evaluate the specific prognostic utility.

Breast Cancer

Comparison of early quality of life in patients treated with radiotherapy following mastectomy or breast conservation therapy: A prospective study

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Introduction: To compare quality of life (QOL) in breast cancer patients from a developing country after breast conservation surgery (BCS) or mastectomy and adjuvant radiotherapy (RT). **Materials and Methods:** In a six month period, all consecutive early and locally advanced breast cancer patients treated with either BCS or mastectomy and treated with RT were accrued. All patients who underwent mastectomy were treated with 45 Gray/20#/4 weeks. Patients with BCS were treated with a dose of 45 to 50 Gray/25#/5 weeks to whole breast followed by tumour bed boost (15Gray/6 #/6 days with suitable energy electrons). Prospective evaluation of QOL using EORTC QLQ C30 and breast cancer specific QLQ BR23 was done before starting RT, at mid-RT and at RT conclusion. **Results:** Among 225 patients filled QOL questionnaires 113 patients had mastectomy and 142 patients underwent BCS. Reliability test (Cronbach alpha) for questionnaire filling was 0.669 to 0.886. At pre-RT assessment, global QOL scores in mastectomy and BCS groups were 71.1 and 71.3 respectively. There was no significant difference in pre-RT EORTC QLQ C30 functional and symptom domains between mastectomy and BCS patients. However, social function domain score was higher in patients underwent mastectomy (83 versus 73.9; P = 0.018). In QLQ BR23 domains, body image and sexual functioning domains were similar between the two groups. However, sexual enjoyment (10.9 versus 47.6; P = 0.006) and future perspective (7.4 versus 37.1; P = 0.036) domain were significantly better in BCS arm. There was no difference between