Symposium no. 8: Cancer Risk Assessment

8.019

DNA STRAND SPECIFICITY FOR UV-INDUCED MUTATIONS AT THE HPRT LOCUS IN CHINESE HAMSTER CELLS

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We studied the influence of DNA repair on the nature and the distribution of UV-induced mutations at the hprt locus in chinese hamster cells. In repair proficient cells over 85% of the mutations were caused by photolesions in the nontranscribed strand, whereas in repair deficient cells more than 90% of mutations occurred at dipyrimidine sites localized in the transcribed strand. In repair proficient cells preferential removal of lesions from the transcribed strand of the hprt gene correlates with the observed DNA strand specificity of mutations. Furthermore, we suggest that in the absence of DNA repair differences in the degree of misincorporation opposite a lesion for lagging and leading strand DNA synthesis may dictate the pattern of UV-induced mutations.

8.020

EPIDEMIOLOGIC STUDY OF CERVICAL CANCER IN FARS PROVINCE, IRAN

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A cross sectional study of the risk factors of cervical cancer cases and control cases matched for age and partner was performed in Fars Province, Shiraz, Iran. The Result of this study is as follow:

Patients / Risk Factor	Case $\bar{x} \pm$ lsd or P.	Control $\bar{x} \pm$ lsd or P.	P
Age at marriage	13.83 ± 3.69	18.83 ± 8.34	
Parity	7.45 ± 2.57	4.16 ± 2.62	
No. of papsmear	1.66 ± 1.68	3.00 ± 2.2	
Husbans"s partner	76.5	0	
Intercourse during period	80%	7.7%	
Spotting	79.2%	15.4%	
Smoking	38.5%	15.4%	
Illiterate	81%	23%	
Low socio-Eco.	60%	15.4%	
Residence Rural	25%	15.4%	

8.021

MORPHOLOGICAL TRANSFORMATION AND INTERCELLULAR COMMUNICATION IN SYRIAN HAMSTER EMBRYO CELLS

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Morphological cell transformation and intercellular communication are two in vitro short-term tests that are suggested to detect non-genotoxic carcinogens. Inhibition of intercellular communication has been implied as an important aspect in the induction of cell transformation. We studied the level of intercellular communication in normal, morphologically altered and transformed colonies of control, TPA- and diethylhexylphthalate-exposed Syrian hamster embryo (SHE) cells. Within each regimen there was no difference in intercellular communication in the three categories of colonies. The results indicate that depression of intercellular communication is not sufficient for the expression of transformed morphology in colonies of SHE cells.

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8.022

Carriers of a Breast Cancer Gene may be at Reduced Risk of Ischaemic Heart Disease. Daniel E.Porter and Michael Steel, MRC Unit of Human Genetics, Edinburgh, U.K.

We have collected data on 18 Scottish pedigrees containing 95 cases of Breast Cancer (BC) and in which a single line of transmission of a presumed dominant gene is clear. A retrospective analysis on Cause of Death was performed using Registrar General for Scotland records. Of 21 deceased presumed obligate carriers of the BC gene, who did not themselves have breast cancer, 11 died from causes other than malignancy. None had Ischaemic Heart Disease (IHD) as registered cause of death. 97 age and sex matched non-obligate carrier relatives who died from non-malignant causes included 28 who died from IHD, a significant difference ($p<0.05$, $X^2=4.00$).
When compared with the published Scottish population data for the period 1950-89, the death rates for IHD was not significantly reduced in 'Breast Cancer' families overall (33/7% and 34.6% respectively, after exclusion of deaths from malignancy), but our data raise the possibility that the distribution of IHD deaths in these families is biased towards those who have not inherited the BC gene. Persistence of such genes in the population may therefore be attributed to a survival advantage in respect of non-malignant disorders.

8.023

EFFECT of ADJUVANT TAMOXIFEN for BREAST CANCER on ENDOMETRIAL CYTOLOGY

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Tamoxifen is widely used as an adjuvant treatment in breast cancer, but has recently been implicated in the development of endometrial carcinoma. We have compared endocervical and endometrial cytology of patients taking Tamoxifen for 3 or more years (study group, 49 patients, mean age 54.5 years) with a group of breast cancer patients not taking hormone therapy (control group, 45 patients, mean age 54 years). Clinical pelvic examination of both groups showed no statistical differences in the detection of abnormal findings. Endometrial and endocervical cytology revealed atypical cells in only 1 patient from each group. Histology showed 1 patient to have squamous metaplasia (study patient), and the other patient to have cystic glandular hyperplasia (control patient). A higher proportion of patients taking Tamoxifen had hyperplastic cells, and this reached statistical significance in post-menopausal patients ($p = 0.04$).
In conclusion, there was no difference in the incidence of atypical cells in the uturus and cervix of patients taking Tamoxifen compared with controls.

8.024

INSULIN AND ITS EFFECT ON LIVER TUMOR

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Dietary fat is highly correlated with certain tumors in human populations. One of the possible mechanisms is an elevation in insulin serum level (Carmel et al., J.Nutr. 105:1111, 1975). Our results showed that toads injected with 2mg DMBA/toad,3 times/week for 12 weeks induced liver tumor. Electron micrographs of toad liver tumor showed disorganization of RER which encircle or partially surround the mitochondria. Mitochondrial cristae were rare in comparison with control. Enhancement of liver tumor incidences were detected by DMBA at the same dose level plus insulin 0.05mg/toad,3 times/week for 12 weeks. Electron micrographs of this group showed that hypertrophied mitochondria with rare cristae. RER still dilated. No tumor incidences were detected in toads injected with insulin alone for the same period. It is concluded that insulin increases tumor incidences in toads.