Symposium no. 8: Cancer Risk Assessment

8.025

Screening of colon cancer family members.

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This study is done in the framework of larger investigation of heredity to the cancer in colon cancer family.

According to our program including genealogic, immunologic, endoscopic, ultrasonic and clinical methods 152 first degree relatives of 119 patientes were stadied.

Aggregation (2 and more cases in first degree relatives) of colon cancer in family history was in 13,4%, all kinds of cancer - in 37,8% among 119.

Colon cancer in 8, breast cancer in 1, colonic adenomas in 23 cases among 152 detected. The high level of precancerous deseases (47%) including, besides adenomas, the hyperplastic processes of breast, body utery and ovary was found.

These results confirm the important role of screening and monitoring of colon cancer family members.

8.026

DOMINANT-LETHAL MUTATIONS AND MICRONUCLEUS INDUCTION IN MALE BDF1 MICE BY AMINOGLUTETHIMIDE

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The mutagenicity of Aminoglutethimide (AG) was examined using the tests of dominant lethals and micronucleus in bone marrow polychromatic erythrocytes. The doses of AG of 190, 380, and 570 mg/kg per os, once, were used. It was found that AG induced significant dominant-lethal mutations in all treated groups of mice ($p<0.001$) in all stages of gametogenesis. AG caused a 2-3 fold increase of the number of micronucleated polychromatic erythrocytes at the doses of 380 and 570 mg/kg (significant). At the dose of AG of 190 mg/kg this increase was not significant.

8.027

GENOTOXICITY STUDIES ON RADICAL POLYMERIZATION ACTIVATORS USED FOR THE SYNTHESIS OF BIOMEDICAL ACRYLIC RESINS

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The chemicals studied were: N,N-Dimethylaniline, N,N-Dimethyl-p-toluidine and N-Acryloyl-N'-phenylpiperazine which are commonly used (the former two) or has been recently proposed (the last one) as promoters in redox reactions for the synthesis of acrylic resins. They were analyzed for the induction of genic and genomic mutations (Salmonella/microsome test and micronucleus test, performed on V79 cells) and of DNA-damage/repair (alkaline DNA elution, performed both in vitro and in vivo, and UDS test on EUE cells). The results obtained up to now suggest that the three chemicals do not produce gene mutations, DNA-damage or chromosomal fragmentation (typical of agents binding DNA covalently); they produce however numerical chromosome mutations depending on malsegregation of chromosomes during mitosis.

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8.028

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POSSIBLE RACIAL DIFFERENCES IN PROSTATE SPECIFIC ANTIGEN (PSA) LEVELS IN PATIENTS WITH LOCAL-REGIONAL PROSTATE CANCER. Prostate cancer is a significant health problem in blacks. The incidence and mortality rates are higher in blacks than in whites; blacks present with a higher stage at presentation. PSA is a very useful serum marker in prostate cancer. PSA levels increase with advancing stage and tumor cell burden. We analyzed data from a cohort of 90 patients to determine whether there were any racial differences in PSA levels prior to treatment in local-regional prostate cancer.

The mean PSA levels were significantly higher in blacks than in whites ($p = 0.002$); the difference remained significant in multivariate analysis adjusting for stage and grade ($p = 0.006$). Thus, our results are not unequivocal, but our data do suggest that racial differences in PSA levels may exist. The cause(s) of these possible differences between blacks and whites remains to be determined.

8.029

N-METHYL-N-NITROSOUREA(MNU)-INDUCED INTESTINAL CARCINOGENESIS IN HYDROXYUREA(HU)-EXPOSED RATS

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Continuous infusion of HU results in cell cycle synchrony after release from G1-S block in vivo. In contrast to the liver (Rabes et al. 1986) a single injection of MNU (50 mg/kg i.p.) 1 hr after stop of a 10 hr HU infusion (1.25 mmol/kg/hr i.v.) does not increase tumor incidence in the intestine. Tumor localization does not significantly differ in HU-exposed and non-treated rats nor do histological types or adenoma/carcinoma ratio. In 41 randomly selected intestinal tumors the prevalence of activated ras genes was studied. In contrast to MNU-induced rat mammary carcinomas which show H-ras codon 12 mutations (Zarbl et al. 1985) neither H-, K- nor N-ras mutations were observed in codon 12 or 61 of PCR-amplified samples. It is concluded that even in a single species organotropic effects of HU as well as molecular mechanisms of MNU-induced carcinogenesis differ considerably.

8.030

B. Zemła: Risk relative of lung cancer among natives and immigrants and tobacco smoking, occupational hazards and ambient air pollution

A case-control study has been applied to analyze lung cancer risk.

The results of the undertaken attempt to evaluate lung cancers in relation to certain etiological factors showed that the influence of different ambient air pollution levels /mainly industry emission/ on lung cancer incidence risk was more and more within of the zones where increased impurities of air /standardized by tobacco smoking and conditions in the microenvoironment of the place of work/. This relation is more distinct among native population living on Upper Silesia region /southern part of Poland/.