

$p = 0.007$  respectively). Moreover, all the types of tumour patients had the tendency to high occurrence of DRB-11 allele; however, only in BC group this difference reached the level of statistical significance (25% vs. 11.7%;  $p = 0.007$ ). Other peculiarities in distribution of DRB alleles were less universal. In particular, there was a decrease in frequency of DRB-1 allele ( $p = 0.018$ ) and an increase of DRB-3-1 allele occurrence ( $p = 0.003$ ) in lung cancer patients. Further, the increase in frequency of DRB-2 allele in leukemia individuals was revealed ( $p = 0.048$ ).

**Conclusions:** The data imply the role of individual features of HLA class II genotype in the determination of susceptibility to neoplastic diseases.

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POSTER

### Long-term assessment of dysplasia, DNA ploidy, proliferation and p53 alteration in ulcerative colitis

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**Purpose:** Malignant transformation in long-standing ulcerative colitis is a rare event. The onset of this process is difficult to predict. The specific aim of the present study was to find additional cellular characteristics with possible predictive value.

**Methods:** The retrospective study comprised 22 patients with long-standing ulcerative colitis. The average length of disease was 10 years. 6 patients developed a colorectal carcinoma. All patients had between 4 and 7 colonoscopies within at least 5 years. At those instances biopsies were taken at 8 different locations. 5 tissue sections were cut from each paraffin-embedded specimen and stained for the following purposes: Hematoxylin-eosin, Feulgen (DNA), MIB 1 (Ki-67), p53, WAF1. The latter 3 were stained by means of the ABC-technique. DNA assessment were performed in an image cytometry manner.

**Results:** Dysplasia of grade 3 was mainly observed in those patients, that later developed a colorectal carcinoma. The grade of dysplasia did not correlate with DNA-anueploidy. Several specimens with low grade dysplasia were highly aneuploid, especially in those patients who later had high grade dysplasia and a carcinoma subsequently. All 6 carcinoma patients had highly aneuploid lesions up to 4 years before the cancer was diagnosed. The histological grade of inflammation correlated well with the proliferative activity (MIB1). P53 levels were low, whereas WAF1 was highly elevated in most lesions, indicating the presence of wild-type p53 function.

**Conclusion:** All carcinoma patients had highly aneuploid lesions years ahead of the final diagnosis, that were macroscopically and microscopically unsuspecting. Nuclear DNA evaluation in ulcerative colitis patients appear thus to be of additional value in the individual risk assessment.

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POSTER

### DNA damage in blood lymphocytes of former uranium miners

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**Purpose:** Uranium miners who were employed during the forties and fifties in mines of the former Wismut AG were highly exposed to radon. The intention of our study was to investigate the degree of DNA damage in blood lymphocytes of these former uranium miners.

**Methods:** We investigated a group of 41 former uranium miners and compared the results with those of several control groups with different diseases of the lung (lung cancer in smokers and former asbestos workers, lung fibroses, inflammatory lung diseases) and a group of healthy persons. Frequencies of DNA single-strand breakage and cross-linking in lymphocytes were determined by alkaline filter elution. The number of chromosomal aberrations was also determined for blood lymphocytes.

**Results:** The uranium miners had a significantly lower DNA elution rate for PC-filters and digestion with proteinase K than the control groups. This result could indicate an elevated rate of DNA-DNA cross-linking for the former uranium miners. The number of chromosomal aberrations was significantly elevated for the former uranium miners compared to the patients with lung cancer and lung fibroses.

**Conclusions:** The results of alkaline filter elution and chromosomal aberrations point to a higher genotoxic damage in lymphocytes of former uranium miners even after decades of exposure cessation.

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POSTER

### Cancer genetics knowledge of doctors treating cancer patients

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**Purpose:** The cancer genetics information is growing up during the recent years. We performed a study which was designed to evaluate the view of doctors treating cancer patients on the following issues: genetic predisposition to cancer, genetic testing and cancer screening. Their knowledge on common Mendelian inheritance was also determined.

**Methods:** Two approaches for obtaining the relevant information were used. Anonymous questionnaire was sent to 46 doctors. It was arranged to cover main practical topics of cancer genetics as well as management of the patients with regard of genetic counseling and predictive testing. The other methodology step comprised search through the patients' data and assessment of whether or not the information about family history and related problems had been collected and exploited.

**Results:** Questionnaire was returned by 41 doctors. About 80% of them knew about familial cancer syndromes and half was able to specify some isolated genes. Most of them considered genetic testing and cancer screening just as a research work yet not applicable in the clinical practice. Only two physicians were aware of cases with familial cancer. 60% of specialists had a good knowledge of Mendelian pattern of inheritance. Looking through 850 patients' data we found out that a family history was clarified in just 25% of them.

**Conclusion:** Cancer medical specialists are moderately informed in the cancer genetics problems. There is a demand for a collaboration with genetic counseling clinic.

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POSTER

### Amplification of ERBB-2 (HER-2/NEU), ERBB-1 (HER-1) and C-MYC oncogenes often combines with the deletion of chromosome 17 short arm in human carcinomas

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**Purpose:** Do tumours possess co-incidence of oncogene activation and suppressor oncogene inactivation?

**Methods:** Amplifications of ERBB-2 (HER-2/NEU), ERBB-1 (HER-1), and C-MYC oncogenes and losses of heterozygosity (LOH) at chromosomes 11p (probe HRAS-1), 17p (probe YNZ-22) and 17q (probe THH-59) were studied in 165 malignant tumours (60 breast, 22 ovary, 40 colorectal, 23 lung and 20 thyroid carcinomas) by Southern-blot.

**Results:** A statistically significant correlation ( $P < 0.01$ ) between amplification of these genes and 17p deletions was demonstrated: increased oncogene copy number was observed in 11 of 46 (24%) informative tumours with LOH, but in only 3 of 61 (5%) without LOH. This association was mainly due to a high incidence of ERBB-2 amplifications combined with 17p deletions, whereas the occurrence of extra copies of ERBB-1 and C-MYC was too low for any certain conclusions. On the other hand, the tendency ( $P < 0.1$ ) to negative correlation between ERBB-2 gene extradosage and chromosome 11p losses was revealed in breast tumours.

**Conclusions:** The data confirm the critical role of non-random combination of oncogene activation and suppressor gene inactivation in malignant growth development.

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PUBLICATION

### Apoptosis corrected proliferation fraction in childhood sarcoma shows binominal distribution suggestive of switch mechanism in proliferation control

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**Purpose:** Previous studies of tumour proliferation control may have been confounded by variable degrees of apoptosis. We studied tumour proliferation