Symposium no. 11: New Approaches to Cancer Diagnosis and Management

11.031

THE RELATIONSHIP OF ESTROGEN RECEPTOR STATUS /ER/ WITH HISTOLOGICAL TUMOR DIFFERENTIATION AND CLINICAL STAGE IN HUMAN BREAST CANCER.

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Eighty women with operable breast cancer were included in the study. Primary tumor specimens were assayed for ER content using immunocytochemical techniques. The tumors were graded histopathologically according to Bloom and Richardson criteria. It was found that histological grading correlates with ER status. Grade I and grade II tumors taken together had significantly higher ER status >90 fmol/mg compared to tumors grade III <20 fmol/mg ($p < 0,001$). There was no correlation between the presence of ER and clinical UICC stage of disease. Our results suggest that in primary breast cancer the patients with high ER level represent early grade of the tumor histopathology and this relationship has important prognostic meaning as well as predictive value of endocrine responsiveness.

11.032

A COMPARATIVE STUDY OF ENZYME ACTIVITY IN LUNG TISSUE OF PATIENTS WITH SQUAMOUS CELL LUNG CANCER UNDERGOING PULMONARY RESECTION

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The investigation of activity and properties of acid and alkaline phosphatases, pyrophosphatase, 5'-nucleotidase, fructose-1,6-diphosphatase and aminotransferases (AlAT, AspAT) in homogenates of normal and neoplastic pulmonary tissue obtained from patients (pts) with squamous cell lung cancer was performed. There were 20 pts, all men, aged 49 to 69 years (mean 57,5 years), with histologically proven diagnosis of squamous cell carcinoma. All pts underwent pulmonary resection. Samples for determining enzymatic activity were obtained from postoperative specimens. Preliminary results indicate that activities of pyrophosphatase in lung tumour tissue are considerably increased, and at the same time proteolytic modification of fructose-1,6-diphosphatase takes place. No significant changes of the activity of the remaining enzymes were observed.

11.033

SPECIFIC IMMUNOREACTIVITY IN BREAST CANCER PATIENTS: CORRELATION WITH 5-YEARS SURVIVAL

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We have studied the specific immunoreactivity in patients with different stages of breast cancer using the Leukocyte Adherence Inhibition Assay /LAI/. The patients who have had breast cancer with metastases in axillary lymph-nodes had significantly better specific immunoreactivity than those patients who have had only breast tumor without metastases. In first group of patients, 84.3% had positive immunoreaction in LAI assay in comparison with only 54.3% immunoreactive patients in a group without metastases. Furthermore, those patients with axillary lymph-nodes metastases, who have had a good specific immunoreactivity prior to surgical removal of tumor, had significantly better five-year survival rate.

11.034

Effect of Suramin and IGF-I on human breast cancer cell lines (HBCCL) cultured in serum-free medium (SFM).

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The mechanism by which Suramin (Sur) exerts its cytostatic-antineoplastic activity in human cancer is still under investigation. It has already been shown that Sur is able to bind peptide growth factors blocking their mitogenic action; nevertheless other modalities have been postulated. This study was aimed at investigating the effect of Sur on the metabolic activity of ER+ MCF-7 and ER- MDA-MB231 HBCCLs. Chemosensitivity after treatment with 10 nM IGF-I, 35 to 280 μM Sur and the combination IGF-I + Sur was assessed, by the tetrazolium-based colorimetric assay (MTT), after 2 and 3 days of culture in SFM. IGF-I stimulated the growth of MCF-7 and MDA-MB231 cells of 60% and 9% respectively. Sur induced a dose-dependent growth inhibition; equivalent concentration (280 μM) corresponding to the ID50 in MDA-MB231 showed a 25% of inhibition in MCF-7. The association IGF-I + Sur didn't affect the ID50 in ER- but reduced the cytotoxicity to 5% in ER+ in which the total abolishment of the IGF-I stimulatory effect was observed. These data indicate that Sur could act not only by interfering in the IGF-I pathway but also, as shown in IGF-I-deprived medium, via reducing cellular metabolism.

11.035

DOES $HMFG_2$ HAVE A ROLE IN MONITORING EPITHELIAL OVARIAN CANCER ?

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Serum $HMFG_2$ was assayed using a sandwich ELISA in 880 serial samples from 215 patients with epithelial ovarian cancer (EOC). $HMFG_2$ levels were elevated post-operatively in 18/38 (47%) patients with stage I, 13/24 (54%) with stage II, 71/115 (62%) with stage III and 32/44 (73%) with stage IV disease. Univariate analysis showed $HMFG_2$ to be a significant predictor of progression free survival ($p<0.05$) and overall survival ($p<0.05$) after one cycle of primary chemotherapy, although $HMFG_2$ was less significant than CA125 and not independent of CA125 in multivariate analysis. $HMFG_2$ added to the discrimination of CA125 in a stepwise discriminant analysis ($r=0.183$, $p<0.005$). Assay of $HMFG_2$ in patients with negative CA125 levels increased the sensitivity compared to CA125 alone by 2.9%, but decreased specificity by 17.3%. $HMFG_2$ gave additional accurate information to CA125 only in patients with advanced poorly differentiated serous EOC, who comprise the predominant EOC patient group. The value of $HMFG_2$, like CA125, is at present limited by available treatments.

11.036

ELEVATION OF SERUM C-NEU P185 IN EPITHELIAN OVARIAN CANCER (EOC) PATIENTS IS A LATE CLINICAL EVENT.

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Similarities in expression of the c-neu proto-oncogene have been observed in patients with breast and ovarian cancer - immunohistochemical studies of both have shown a significant inverse correlation with survival. Recently, a sandwich ELISA, employing the MAbs NB3 as catcher and TA1 as tracer, has been developed. Using this ELISA, elevated serum p185 has been found in 15% and 23% of patients with localised and metastatic breast cancer respectively. We have used this ELISA for the first time to assay serial serum samples from 174 EOC patients, followed up post-operatively for a mean 28.4 months. Levels were elevated in 20/174 patients; the frequency of elevation increased with advancing stage. When subjected to univariate and multivariate analysis together with residual disease, age, performance status, ascites, adhesions, and CA125, serum p185 was not a significant predictor of progression free survival or overall survival. Moreover, serum p185 was not raised until disease progression became clinically manifest in 17/20 patients. While p185 may be involved in EOC pathogenesis, serum assay provided no useful management information.