

HETEROGENEITY OF FLOW CYTOMETRIC DNA DISTRIBUTIONS AS A PROGNOSTIC VARIABLE IN PRIMARY MALIGNANT MELANOMA.

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Flow cytometric single parameter analysis of 49 patients with primary malignant melanoma of the skin in stage I were studied. For most patients, several samples from different regions of the tumour were obtained. The aim of the study was to investigate the prognostic significance of flow cytometric DNA measurements. The median followup time is now greater than 5 years. Maximum likelihood estimates of the DNA distributions showed a marked heterogeneity with respect to the number of subpopulations and the DNA indices. There was a considerable intra- and inter-patient variation. Inter-patient variation was significantly larger than intra-patient variation. Life table analysis of recurrence free survival showed a significantly poorer prognosis for patients with DNA measurements with many subpopulations and high DNA indices ($p < 0.05$). Similar analysis for survival were performed.

HETEROGENEITY OF ESTROGEN RECEPTORS IN HUMAN BREAST CANCER. ITS CLINICAL RELEVANCE?

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It is well recognized that only 50% of patients with estrogen receptor (ER) positive tumors respond on endocrine therapy. Ten years ago it was postulated that this observation could be explained at least in part by tumor heterogeneity viz. tumors featuring both ER positive and ER negative cells. This hypothesis has been evaluated utilizing an immunohistochemical ER analysis recently developed in our laboratory performed on formalin fixed paraffin imbedded sections obtained from breast cancer tissue. The study consisted of A:An evaluation of ER in primary tumors vs. ER content in regional- and distant metastases. B:An evaluation of ER content of primary tumors and patients response to endocrine therapy when they got advanced disease. It was found that: (1) Both primary tumors as well as their corresponding regional and distant metastases showed pronounced ER heterogeneity. However, in 10 to 15% of the cases only a difference in ER content was observed. (2) 60% of patients with ER positive tumors responded on endocrine therapy whereas only 5% ER negative tumors responded. The important feature for succes of treatment

appeared to be related to ER positivity rather than to number of ER positive cells. These two observations do not lend support to the hypothesis that ER heterogeneity is of major importance for the relative succes of response to endocrine therapy in patients with breast cancer. (Sponsored by The Danish Cancer Society and The Danish Medical Research Council).

HETEROGENEITY OF HUMAN UROTHELIAL CELL LINES PROPAGATED IN VITRO.

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The classification and identification of established cell lines are essential questions for all studies of cellular transformation in vitro. We have previously classified a number of human urothelial cell lines according to their grade of transformation based on studies of their morphology, growth pattern, life span, tumorigenicity in nude mice, and ability to invade cocultured normal tissues in vitro. For the identification of the individual cell lines HLA polymorphism and Restriction Fragment Length Polymorphism (RFLP) of various genes (α -globin, Ha-ras-1, HLA-Dr) have proved to be useful. Such studies have revealed the contamination of some cell lines with other cells, and the heterogeneity of other non-contaminated, cloned cell lines.

THE NORDIC CANCER ATLAS - OVERVIEW OF RESULTS.

Bendix Carstensen. Danish Cancer Registry. Danish Cancer Society.

The Nordic Cancer Atlas is the result of collaboration between the cancer registries in Denmark, Finland, Iceland, Norway and Sweden, set up to describe the variation in cancer incidence in 72 regions in the five countries. The number of cases of 29 cancers and average population size in the regions and 5-year age classes were collected for the period 1970-79. Standardized morbidity ratios (SMRs) were computed for each cancer site and sex, and used as basis for colouring maps of the five Nordic countries. For international comparability we also computed directly standardized incidence rates (world standard). We found large variations in incidence levels, not only between rural and urbanized areas as expected, but also between countries and within countries across borders. Testis cancer showed a pattern with little variation within countries, but with enormous differences between countries; the incidence rate is 4.5 times higher in Denmark than in Finland. Melanoma of skin is more frequent in southern parts of Scandinavia, and exhibits a patterns that does not follow national borders. Lung