Mel 17**INCIDENCE OF MALIGNANT MELANOMA IN CENTRAL HESSE**

E. Paul, M. Rauh

The entire catchment area of the Center of Dermatology at the University of Giessen is composed of six districts comprising about one million inhabitants. Our calculations are only based on patients coming from this area. By contacting all general practitioners and dermatologists from this area we made sure that all- or nearly all- patients from this area were referred to our clinic. From 1981 to 1983, three hundred and two cases of malignant melanoma were registered from places within the catchment area. This represents an overall incidence of 10.1 melanomas per 100,000 inhabitants per year. There are minor variations in the incidence rates of the various districts, ranging from 12.4 to 7.8 (see table). It seems that districts with larger towns and denser population have a slightly higher incidence rate than districts with predominantly rural population. In the district of Giessen itself, the incidence rates varied greatly among the communities (from 26.9 to 3.0), which may be due to the small number of patients and melanomas registered in the different villages. However, the overall incidence rate of 10.1 in the catchment area is based on a sufficient number of inhabitants to be regarded as true and statistically valid.

Incidence of malignant melanoma in the various districts of the catchment area of the Center of Dermatology, University of Giessen

District	Incidence rate per 100,000 inhabitants per year
Wetterau	12.4
Giessen	11.1
Fulda	10.3
Limburg	9.9
Vogelsbergkreis	9.7
Lahn-Dill-Kreis	7.8

Zentrum für Dermatologie und Andrologie - Hautklinik - am Klinikum der Justus-Liebig-Universität, Gaffkystraße 14, D-6300 Giessen

Sof 01

DO HETEROTRANSPLANTED SOFT TISSUE SARCOMAS RETAIN THEIR PRIMARY MORPHOLOGIC AND FLOW CYTOMETRIC FEATURES ?
K. Donhuijsen, D. van Beuningen, V. Budach, U. Schmidt and Ch. Streffer

Introduction: Many reports maintain that human tumor tissue transplanted to athymic nude mice retains its morphological and biological characteristics over many passages. However, we have made some observations that have cast doubts on this statement.

Methods: 20 human soft tissue tumors were analysed which could be established for at least 3 and up to a maximum of 50 passages. The histologic features of the various tumor passages were compared with that of the primary sarcomas. Criteria such as differentiation, cellularity, number of mitoses and amount of necroses were evaluated. In addition, ultrastructural investigations were performed, and DNA-measurements including the assessment of S-phase fractions were performed flow cytometrically. Finally, the frequency of micronuclei was estimated.

Results: In several cases it could be observed that the various tumor passages exhibited a lack of identity with the primary tumors or there was lack of identity among the sarcoma passages. This could be shown by morphology as well as by flow cytometry.

Conclusion: Transplanted tumor tissue should not be assumed to remain constant throughout a number of passages. Therefore, it is necessary to control the single tumor passages permanently by means of subtle histomorphological analyses in addition to respective flow cytometric investigations.

Universitätsinstitut für Pathologie, Westdeutsches Tumorzentrum, Hufelandstr. 55, D-4300 Essen 1

Sof 02

FLOW CYTOMETRIC ANALYSIS OF OSTEOSARCOMA AFTER PRE-OPERATIVE CHEMOTHERAPY ACCORDING TO THE COSS 82 PROTOCOL.
A. Roessner, Th. Bösing, W. Meiln, W. Hiddemann, E. Grundmann

Recent flow cytometric results have documented a strong heterogeneity of ploidy patterns and a high rate of proliferation in highly malignant osteosarcomas. It is still unclear whether certain tumor kinetic parameters of osteosarcoma (DNA ploidy, proliferation) could be reliably correlated with the response to preoperative chemotherapy as currently applied according to the COSS 82 protocol. The problem was approached by flow cytometrical analysis of 20 resected specimens from osteosarcoma patients after chemotherapy, and comparison of the results with the respective histologic data. Grades of regression were determined according to Salzer-Kuntschik. Two cases showed complete regression (grade I); in 3 cases there were some isolated viable tumor cells (grade II). 2 patients showed grade III with up to 10% viable tumor tissue. There were 6 cases of grade IV (10-50% viable tumor tissue), and 7 of grade V (over 50% viable tumor tissue). Flow cytometric analysis was performed, corresponding to histologic examination, on multiple samples taken from a representative slice of the whole tumor. Using this technique we found no DNA aneuploidies whatever in group I, whereas the cases of group V had almost exclusively aneuploid populations, and comprised all tumors with more than 2 DNA-aneuploidies. The nonresponder groups IV and V comprised all populations with a DNA index (DI) over 2.0. All DNA-aneuploid lines had an S-Phase compartment over 12%. Our results illustrate the possible association between the regression of osteosarcoma under preoperative chemotherapy, and the tumor kinetic parameters so analysed. A high DI (over 2.0) and a higher number of DNA aneuploid cell lines (more than 2), are indicators for a poor response to chemotherapy.

Gerhard-Domagk-Institut für Pathologie der Universität, Domagkstr. 17, D-4400 Münster

Sof 03

FLOW CYTOMETRIC ANALYSIS OF MALIGNANT FIBROUS HISTIOCYTOMA OF BONE.
W. Meiln, A. Roessner, E. Grundmann

Tumor kinetic properties such as DNA ploidy and proliferation have been studied in malignant fibrous histiocytomas (MFH), so far, only in a few isolated cases. Recent publications have described a method for flow cytometric analysis of tissue kinetic parameters in formalin-fixed, paraffin-embedded samples, which was now applied to kinetic studies of 10 cases of MFH. - Flow cytometry demonstrated DNA hyperdiploid stem lines in 2 of 10 tumors with DNA indices (DI) of 2.0 and 2.2. The mean value of S-phases was 8.8%. - Comparison of these results with our previous data from 29 highly malignant osteosarcomas and 24 Ewing's sarcomas with aneuploidy rates of 90% and 58%, respectively, showed obviously lower rates in MFH (2/10, = 20%). The mean value of S-phases (MFH = 8.8%), however, did not differ much from that of Ewing's sarcomas (7.5%), being much lower in both these tumors than in the highly malignant osteosarcomas (18.8%). - On account of the low number of MFH cases studied, the prognostic relevance of DNA ploidy and proliferation rates cannot be definitely judged; moreover, most of these cases occurred less than 5 years ago, and the cases are dissimilar in terms of localization, staging, and therapy. Nevertheless, the kinetic properties of MFH seem to predict a better prognosis than those of osteosarcoma and Ewing's sarcoma in accordance with general experience. Our results confirm that flow cytometric analysis of kinetic parameters in paraffin-embedded tumor tissue may be useful especially in rarer types, where it may help to collect data of more cases, and even offer some prognostic hints at the time of DNA ploidy and proliferation measurements.

Gerhard-Domagk-Institut für Pathologie der Universität, Domagkstr. 17, D-4400 Münster