Symposium no. 2: Biology of Melanomas

2.007

AN UNUSUAL PATTERN OF MELANOMAS: INTRACRANIAL LOCALIZATION

P.Gaetani, D.Lombardi, M.Danova*, F.Zappoli, R.Rodriguez y Baena**
Department of Surgery, Neurosurgery, IRCCS Policlinico S.Matteo,* Department of Internal Medicine, ** Neuroradiology, "C.Mondino Foundation" University of Pavia, Italy

Among pigmented lesions of the CNS, intracranial melanomas represents an item of great interest for neurosurgeons and neurooncologists because although the malignant behavior of this oncotype, patients could be successfully treated. Aside to commonly employed immunohistochemical techniques (peroxidase-antiperoxidase staining, anti-vimentin antibody, anti-melanoma antibody, anti-S-100 protein antibody) which are useful in confirming the diagnosis, the analysis of proliferative activity (labelling index) evaluated as percentage of cell positivity to anti-PCNA antobodies and with DNA flow cytometry allowed to observe dramatic differences in DNA histograms of specimens obtained within few millimiters of each other. In 43% of cases symptoms and signs of intracranial hypertension were reported at admission; focal neurological deficits are reported in 34 % of patients; the interval between first symptoms and admittance ranged between 0 and 6 months in more than 45% of cases. Lobar melanomas account for over 55% of cases with a mean duration of symptoms of less than 6 months; the overall survival of patients undergoing gross total removal was significantly longer (19.6 ± 2.3 months) when compared to that of patients undergoing partial removal or biopsy (9.3 ± 2.4), or not subjected to any surgical treatment (3.4 ± 0.7 months). Another suggested tool is radio-immuno scintigraphy with monoclonal antibodies anti-melanine in order to exclude extra-neural localizations.

2.008

THE INCORPORATION OF LABELLED NUCLEOSIDE AS MODEL TO MIMIC HYPERTHERMIA ANTI-CANCER TREATMENT

Goldschmidt, HMJ, Ceulemans, EFJ, Majoor, JM and van der Giessen, PH. Department of Oncochemistry, Dr. Bernard Verbeeten Institute, Brugstraat 10, 5042 SB Tilburg, The Netherlands.

The effect of hyperthermia on melanoma and HeLa cells was investigated by means of the incorporation of the labelled nucleoside H3-uridine. The nucleosides incorporation assay is a short-term in vivo assay routinely applied to test the effect of cytotoxic drugs and of radiotherapy on tumour cells of individual patients (e.g. J. Surg. Res. 50, 135-138;1991). Our study indicates that this assay can be used also to mimic the effects of hyperthermia on cells. So we evaluated with this test system the sensitivity of various cell types, thermotolerance, cell-phase specificity, synerchismn with radio- and chemo-therapy and the influence of electro-magnetic radiation. At 42.5°Celsius during 60 min. a 41.8% reduction of incorporation was obtained, a pseudo 3D dose response surface was constructed, indications for thermotolerance, synerchismn, cell-phase G1 specificity were obtained and no influence of electro-magnetic radiation was detected. The results gave a deeper understanding of the physiological aspects of hyperthermia treatment and confirmed our clinical findings so far.

2.009

HUMAN MELANOMA CELL LINES PRODUCE BASIC FIBROBLAST GROWTH FACTOR

W.Macheiner, E.Kokron, K.Patocka, C.Cerni, M.Vetterlein, C.Oismüller, E.M.Kokoschka and M.Micksche
2nd Dept. of Dermat., Inst. of Appl. & Exp. Oncology, Inst. of Tumorbiol. & Cancer Res., University Vienna, Austria

Basic fibroblast growth factor (bFGF) acts as mitogen for a variety of cells including melanocytes and melanoma cells. In this study we investigated the production of bFGF by human melanoma cell lines(n=30). Cell extracts were tested for bFGF in RIA and western blot using specific bFGF-antibodies. mRNA of bFGF was detected by northern blot. We also investigated the expression of bFGF in melanoma cells with immunoperoxidase method (IPM). In 75% of the investigated cell lines bFGF was detected by RIA. This was confirmed by western blot and mRNA could also be detected in several cell lines. IPM revealed presence of bFGF in all tested melanoma lines with 10-90 % positive staining of cells. From these studies we conclude that bFGF is present in malignant melanoma and possibly promotes autocrine growth.

This study was supported by Anton Dreher Stiftung.

2.010

Our diagnosys and treatment principles of malignant melanoma

MOGOS I., MARTA L., PAUNEL U., Oncological Institute Bucharest

Using the experience, aquired by teraographic exploration of 183 patients suffering from various localization of malignant melanoma, the authors have concluded:

1 Our original computerized teraographic method using the Prometheus III system permits: - the investigation of both superficial skin lesions and deep organs, possible site of metastasis;
- delimitate surgeon interest area;
- monitoring of treatment;
- non-harmful posttherapeutic following of the patients;

2 From the treatment of 92 treated patients with malignant melanoma we concluded that:
- DTIC is the most efficient cytostatic in the treatment of this kind of affections. If it is used in a complex chemo-surgical treatment the number of local recidives and of metastasis decreases.
- it assures a significant longer survival without disease symptoms;
- it deteraines the regression or the evolutionless of metastasize lesions in liver, brain or lung;
- large surgical excision of lesion has increased the survival;

For the cases where limphnodes which appeared during evolution were removed, we always add chemo and radiotherapy.
- imaunotherapy is made at the end of chemotherapy with Cantastin, a product of the Cantacuzino Institute;

3 We shall present:
- theraographic images which outline the locoregional spread tendency of malignant melanoma and images of lung, cerebral and liver metastasis;
- the general treatment principles that we use the therapeutical results;

2.011

Vigilin, a novel protein with a possible role in proliferation/differentiation processes and carcinogenesis

G. Neu-Yilik. M. Tronnier, T. Hopp-Christensen, B. Henkel, T. Gloe, H.M. Raabe, H.H. Wolff, P. K. Müller. Med. Universität zu Lübeck, FRG

Using an antibody against a cDNA derived fusion protein we have identified a novel cytoplasmic 155 kd protein with a unique 14-domain structure, which we named VIGILIN because of its obvious involvement in differentiation processes both in vivo and in vitro. Senescence of nontransformed cells, which in early passages express this protein, causes termination of vigilin synthesis. In contrast it is constantly expressed in all transformed or tumor derived cell lines examined so far (24) except for an IL6 dependant cell line which with decreasing proliferation rate stops vigilin expression. Vigilin is not expressed in PBLs but can be induced via mitogen stimulation. In order to assess a possible role of vigilin in tumorigenesis, we stained sections of different melanocytic lesions, i.e. various nevi and melanomas using a PAP technique. Some of these lesions did not show any reactivity whereas others, both benign and malignant, showed a positive cytoplasmic staining with enhanced intensity towards the dermal part of the lesions. These results indicate that in some benign and malignant melanocytic tumors the presence of vigilin may correlate with the differentiation of melanomas.

2.012

WHY DOES MELANOMA APPEAR IN AIDS PATIENTS ?

Mariana Rachkova,M.D.,Lab.Mol.Oncology,Medical Institute,Armeiska str.11,Stara Zagora 6003 BULGARIA

Melanoma and other malignancies have been reported to arise during immune suppression(Green,1981).The common mechanism for immunosuppression is following: UVR alters antigens of Langerhance cells,enhancing the chain Ts(Kripke,1989)-INF-gamma-Mo/Ma(oxidative metabolism and Free Radical production)-antigen expression-T-Cell-Cell-interaction damage-immunosuppression(Rachkova,1991).Thus general and local immunosuppression leads to appearance of melanoma in covered tissue(non exposed to UVR) as well as in AIDS patients,where melanocytes could be activated during HIV infection(Slominski,1984).During immunosuppression may be Tyrosinase is activated according to the principle of interaction and matching in the host(Rachkova,1991).Exogenous and endogenous factors influence T4/T8 ratio by this principle where Tyrosinase and Sialic acid are biochemical metabolites for this interaction.