necrosis, structure of tumoural vascular pattern, vascular emboli and reticular tumoural stroma) had been chosen to estimate the histological degree of malignancy, for all soft tissue sarcomas treated at the Oncological Institute of Cluj-Napoca, Romania, since 1979.

Using a multiple linear regression analysis, according to the Armitage and Gehen model, we selected six factors which showed the best correlation with patient survival in the majority of histologic types of soft tissue sarcomas. Among these, cellularity, mitotic index, polymorphism and macrosis were found essential and sufficient to determine the tumour grade, but tumoural vascular and stromal patterns also proved of important prognostic value in assessing the cancer progression.

EFFECT OF KETOTIFIN (K) ON ADRIAMYCIN (A)-INDUCED HISTAMINE RELEASE AND TOXICITY

F.Bartoli, G.Decorti, L.Candussio, S.Bevilacqua, F.Mallardi(1), V.Grill(1) and L.Bandini

Institute of Pharmacology and Anatomy, University of Trieste, Trieste, Italy.

K is an anti-anaphylactic drug which acts in part, similarly to sodium cromoglycate, by inhibiting mediator release from mast cells. However it has been shown that K induces also a non-cytotoxic histamine release from mast cells. We have recently demonstrated that sodium cromoglycate inhibits A-induced histamine release from rat mast cells and limits its cardiotoxicity. The aim of this study was therefore to test the effect of K on A-induced histamine release and the toxicity in mice. The intraperitoneal (i.p.) injection of various concentrations of K (from 2.1 to 25 mg/kg) induced significant histamine release from mast cells. 30 min afterwards, microscopic observation revealed that these cells were completely degranulated and no more histamine was present in the peritoneum. When administered i.p. to mice 30 min before A (15 mg/kg i.p.), K significantly ameliorated the survival time and reduced the cardiotoxicity. On the contrary, when given simultaneously, K increased the toxic effect of A. These data support the hypothesis that histamine release could play a role in the pathogenesis of A cardiotoxicity.

CHARACTERIZATION OF SERUM IMMUNE COMPLEXES ISOLATED BY SEPHAROSE PROTEIN-A IN GASTROINTESTINAL TUMOURS

C.Bartoloni, R.Baroni, L.Guidi, M.Marciano, A.Triceri and G.Gambassi

Istituto di Clinica Medica Generale, Università Cattolica S. Cuore, Largo A. Gemelli 8, I-00168 Roma, Italy

Circulating immune complexes (CIC) were analyzed in some gastrointestinal tumours to characterise their antigenic components. CIC were isolated from sera by 3.5% PEG precipitation and then purified on Sepharose 4BCL Protein-A followed by acid elution (glycine-HCl buffer). Molecular weight determination of the antigens was then obtained by sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS-PAGE) with discontinuous buffers. Different molecular patterns of migration were shown from various patients. A preliminary analysis of the antigenic components was then undertaken in order to detect those factors being either different from, or in common with, the features displayed from a pool of control sera (normal healthy blood donors).

SERIAL ASSAY OF CIRCULATING IMMUNE COMPLEXES, CEA AND CA 19-9 IN GASTROINTESTINAL CANCER PATIENTS DURING CHEMOTHERAPY OR CLINICAL FOLLOW-UP

C.Bartoloni, L.Guidi, R.Baroni, A.Tricerri, C.Garufi, A.Grieco and G.Gambassi

Istituto di Clinica Medica Generale, Università Cattolica S. Cuore, Largo A. Gemelli 8, 00168 Rome, Italy

Circulating immune complexes (CIC) have been proposed as prognostic markers in human neoplasms even though conflicting results have been reported so far. Very little information is also available on their behaviour during the natural history of the disease as well as during chemotherapy. In this study, at least 4 serial assays of CIC have been performed in 14 patients with advanced gastrointestinal tumours during chemotherapy and in 2 patients with surgically resected colon cancer at intervals of 1 to 3 months. CEA and CA 19-9 were simultaneously assayed. The disease was monitored by CEA in 10 patients, by CA 19-9 in 9 and by CIC in 8. It should be emphasized that high levels of CIC predicted progression of disease in 6/16 patients, recurrence in 1/2 and, in 2 subjects, CIC were the only useful serum marker.

NITROSAMINE EXPOSURE IN SUBJECTS AT RISK FOR CANCER OF THE MOUTH, STOMACH, OESOPHAGUS AND URINARY BLADDER

H.Bartsch

International Agency for Research on Cancer, Lyon, France.

N-nitrosamine acids (e.g. nitrosoproline) excreted per 24 hr urine, represent an index for endogenous nitrosation. Formation of endogenous N-nitroso compounds was assessed by this method in the following subjects: subjects living in high/low incidence areas (a) for stomach cancer in northern Japan and (b) for oesophageal cancer in China; (c) subjects from 26 provinces in China with different mortality for cancer of the oesophagus, stomach and liver; (d) subjects from India with different chewing habits of betel quid; and (e) patients with urinary bladder infection.

In general, higher exposures in endogenous N-nitroso compounds were found in high risk subjects, but individual exposure was greatly affected by dietary components, modifying chemicals or disease state. Vitamin C lowered the body burden of intragastrically formed N-nitroso compounds. Mechanisms by which these nitrosamines are formed in vivo have been evaluated.

ANTIMETASTATIC EFFECT OF IL-2 AND DIFFERENT LYMPHOID CELLS

I.Bašić, M.Šamija and M.Gerenčer

Department of Animal Physiology, Central Institute for Tumors and Allied Diseases and Tissue Typing Center, University of Zagreb, Zagreb, Yugoslavia

We have studied the effect of systematically administered lymphoid cells given in conjunction with IL-2 on established lung metastases. Tumours were an anaplastic carcinoma (ACA) of Y59 rat and a mammary carcinoma (MCA) of CBA mouse. IL-2 was prepared by allosensitation of rat spleen cells with mitomycin C treated mouse splenocytes. Metastases in the lung were generated by i.v. injection of tumour cells. Five days after inoculation of tumour cells, animals were injected i.v. with 10^7 spleen cells from normal or specifically immunized donors or with those cells which were expanded in vitro with IL-2. Following this and every 24 hr thereafter during the 3 consecutive days recipients were given an i.p. injection of 0.5 ml of IL-2. Results indicate that in vivo administration of IL-2 in conjunction with immune lymphocytes in adoptive immunotherapy is effective in controlling metastatic growth in the lungs. In vitro expanded lymphocyte cultures however were less effective than entire splenocyte population.

DEMONSTRATION OF THE POTENTIATION OF ENDOCYTOSIS OF AN ANTI-CEA ANTIBODY BY A COLON CARCINOMA CELL LINE USING ANTI-CEA/NCA ANTIBODIES

N.Berry, I.Z.A.Pawluczyk, R.A.Robins, M.C.Garnett, V.S.Byers and R.W.Baldwin

Cancer Research Campaign Laboratories, University of Nottingham, Nottingham NG7 2RD, U.K.

Carcinoembryonic antigen (CEA) may be a suitable target for immunotherapy of carcinoma of the G.I. tract, and factors which influence the cytotoxic effect of toxin-conjugated anti-CEA antibodies are important. In this study, factors influencing the endocytosis of an anti-CEA antibody by a gastric carcinoma cell line, MKN-45, have been investigated.

MKN cells were incubated on ice for 30 min with an anti-CEA antibody labelled with TRITC whose fluorescence was quenched by conjugation to HSA. After washing, the cells were incubated at 37° C for 2 to 6 hr. As endocytosis of the antibody occurred, the TRITC-HSA was degraded and the increase in fluorescence was quantitated by flow cytometry.

Endocytosis of anti-CEA-TRITC by MKN-45 cells was demonstrated after 2 hr and increased up to 6 hr. This was potentiated, in a dose-dependent manner, by the addition of certain antibodies defining epitopes common to CEA and normal cross reacting antigen (NCA), to the initial incubation mixture. After 6 hr, the value of fluorescence after potentiation was 1.8 times that of unpotentiated endocytosis.

PREVENTION OF EXPERIMENTAL LIVER METASTASES BY LECTIN BLOCKAGE

J.Beuth, H.L.Ko, J.Solter, G.Pulverer and G.Uhlenbruck

University Clinics of Cologne, D-5000 Cologne 41, F.R.G.

According to recent results, our hypothesis that organ-specific lectins (e.g. the D-galactose specific Hepatic-Binding Protein) play an important role in the organ location of metastatic malignant cells, has been evaluated. In Balb/c mice, pre-injection (1 hr) and regular application (for 3 days after tumour cell inoculation) of the lectin blocking agents D-galactose (2 mg/g body weight) or arabinogalactan (0.5 mg/g body weight) completely prevented the establishment of sarcoma L-1 tumour in the liver but did not influence the localization into other organs. Non-specific, galactose-free polysaccharides showed no