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POSSIBLE BIOCHEMICAL BASIS FOR THE ANTICARCINOMA ACTIVITY OF RHODAMINES

I.Hatalová, J.Kolarov, Š.Kužela and B.D.Nelson[1]
Cancer Research Institute, Bratislava, Czechoslovakia and [1]University of Stockholm, Stockholm, Sweden.

Rhodamine 123 and its structural analogue Rhodamine 6G are accumulated and specifically retained in mitochondria of different carcinoma cells. Rhodamine 123 exhibits selective anticarcinoma activity both in vitro and in vivo (Barnal et al. Science, 222, 169-172, 1983). We have shown that these drugs arrest the import of newly synthesized proteins into mitochondria both in whole cells and in an in vitro system. This results from a direct inhibition of the processing protease involved in the proteolytic maturation of newly synthesized precursors of mitochondrial proteins. It is conceivable that the inhibition of this particular step in the biogenesis of the energy transducing membranes may result in a cessation of cell division.

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BIOLOGICAL MONITORING AMONG COKE OVEN WORKERS

Aage Haugen, Georg Becher, Christel Benestad[1], Kirsi Vahakangas[2], Glennwood E.Trivers[2] and Curtis C.Harris[2].
National Institute of Public Health, 0462 Oslo 4, Norway; [1]Central Institute for Industrial Research, P.O. Box 350, 0371 Oslo 3, Norway; [2]Laboratory of Human Carcinogenesis, National Cancer Institute, Bethesda, MD 20205, U.S.A.

Workers show an increased risk of lung cancer after exposure to coke oven emission. In order to better evaluate the hazards connected with exposure to polycyclic aromatic hydrocarbons (PAH) the amount of PAH in the work atmosphere, urinary PAH and PAH metabolites, sister chromatid exchanges and benzo(a)pyrene (BP) - DNA adducts in lymphocytes from the exposed workers were analysed. Personal sampling filters at the battery top showed an average value of 90 $\mu g/m^3$ for PAH on particulates and 176 $\mu g/m^3$ for volatile PAH. A total of 38 PAH compounds were identified. 20% of the PAH were adsorbed to particulates and the use of respirator reduced the PAH-exposure by 30-50%. The analysis of urine samples from the coke oven workers indicated that PAH metabolites were excreted in high concentrations. The mean for PAH concentrations in urine was 234 $\mu g/mmol$ creatinine. Enzyme immunoassays (USERIA) using anti BPDE-DNA antibody and synchronous fluorescence spectrophotometric assays were performed on the DNA samples. BP-DNA adducts were detected in peripheral blood samples, however, there was a wide interindividual variation in the amount of adducts measured.

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PERIOPERATIVE LEVAMISOL IN COLORECTAL CANCER. FIRST EVALUATION OF A COOPERATIVE RANDOMIZED TRIAL

P.Hausner, L.Horák, J.Mašek, K.Šťastný, J.Hulínský, J.Faltýn, K.Novák and J.Čermák
Oncological Research Laboratory, Surgical Clinics III. & I. of FVL Prague of FN 10 Prague of FN Plzen and Surgical Departments of Pardubice and Liberec, Czechoslovakia.

Cell-mediated immunity (CMI) tends to be depressed in patients with cancer. Decreased CMI seems to influence the prognosis of cancer patients unfavourably. The decreased CMI is a sequel of the malignant disease as well as of malnourishment, psychic discomfort, radiotherapy and chemotherapy. Surgery and general anaesthesia add to the list. At the time of surgery of the primary tumour CMI is decreased according to our previous studies in well over one half of all colorectal carcinoma patients. At this time, tumour cells that were not counteracted by the immune system, are disseminated. We chose therefore the time of surgery of the primary for a study of short intensive immunostimulation with levamisol. Moreover, patients who are prepared for the surgery by oral antiseptics and antibiotics can be given levamisol without great organisational effort.

A multicentre randomized trial of 10 days levamisol 2 mg/kg given in three doses daily, starting 7 days before surgery and proceeding as early after surgery as possible was performed. All patients were preoperatively evaluated. Known prognostic factors were registered. The clinical status and CEA serum concentration were registered every 3 months. The survival curves as well as clinical relapse and laboratory relapse curves were determined separately for the groups of perioperative levamisol treated and untreated patients. Statistical significance was evaluated by Cox's regression analysis with consideration given to all known prognostically significant factors.
