Viewing the Journal of the National Cancer Institute

Commentary on the September and October 1972 (Volume 49, Numbers 3 and 4) issues

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September

The Joint Committee on Atomic Energy recently presented testimony on the potential health hazards connected with uranium mill tailings used extensively since 1951 as construction fill material in Colorado. These tailings contain small concentrations of radioactive material. The testimony included a report of excessive mortality from lung cancer and leukemia among residents of Western Slope counties. Seeking confirmation of this claim, Mason, Fraumeni and McKay (National Cancer Institute, Bethesda, Maryland) have investigated cancer mortality trends in various counties of Colorado between 1950 and 1967. They find no trends associated with this residential exposure to radiation from uranium mill tailings.

Studying survival of 3,573 women with cancer of the cervix in New York State, Graham and associates (State University of New York at Buffalo) report a decrease in survival as age increases and poorer survival in the lowest socioeconomic stratum. The type of hospital in which the patients are treated does not affect their lifespan, but they
live longer if they are treated by gynecologists, surgeons and general practitioners experienced in the care of such patients. Survival is enhanced in the early stages of the disease.

Stanton and co-workers (National Cancer Institute) present a new method for the induction of epidermoid carcinomas in rats by cigarette smoke condensate (CSC) which permits the quantitative assessment of carcinogenicity in the lung. Rats are given direct injections in the lung of beeswax containing CSC or the heptane-soluble fraction of this condensate. The consistently high incidence of carcinomas induced by the condensate of less than five cigarettes indicates a sensitive system for the study of the carcinogenicity of CSC fractions. The early metaplastic responses permit quick assessment of the carcinogenic potential of tobacco products.

Using radioimmunoassay, Ruoslahti (University of Helsinki, Helsinki, Finland) quantitates the alpha-fetoprotein levels in patients with primary and secondary cancer of the liver. In 10 of 14 patients with primary liver cancer, the alpha-fetoprotein levels are 1,000 times above the normal serum level. Of 17 patients with secondary liver cancer, 3 have alpha-fetoprotein concentrations above the normal range. No correlation is found between the alpha-fetoprotein levels and the degree of malignancy.

Burbank and Fraumeni (National Cancer Institute) report an increasing nonwhite predominance of age-adjusted death rates for cancer in the United States. The nonwhite predominance began in 1950 for females and in 1956 for males. The study period, 1962-67, compares whites and nonwhites for each cancer site. The increased mortality may be ascribed to improved diagnostic accuracy and reporting and to refinements in death-certificate classification. But the rising rates for some cancer sites may reflect an increase in exposure to environmental carcinogens.

In an examination of the effects of in vitro growth characteristics, cell morphology and state of ploidy of 12 human leukocyte cell cultures on the activity of the proliferation inhibitory factor (PIF), Green et al. (Boston University School of Medicine, Boston, Massachusetts) find no ready correlations between target cell sensitivity of PIF and these parameters of cell origin. Primary cultures of human amnion cells are the most sensitive to PIF. Cells of epithelial morphology are somewhat more sensitive to PIF than are cells of fibroblastic or fibroblastoid morphology.

Rudali and associates (Institut du Rayonnement, Paris, France) report that contraceptives or gestagens do not increase mammary carcinogenesis in female mice but produce tumors in castrated male mice.

In an investigation of the interaction between polyriboinosinic-polyribocytidyllic acid and mouse and human cells in tissue culture, Badger et al. (Boston University School of Medicine) find that labeling of DNA and RNA is enhanced without increased protein synthesis or cell replication.

An increased incidence of bladder and kidney lesions and bladder neoplasms in rats fed cyclamates is shown by Friedman and associates (Food and Drug Administration, Washington, D.C.).

Schoental and Cavanagh (MRC Laboratories, Carshalton, England) describe two spinal cord tumors and one brain tumor in rats given pyrrolizidine alkaloids.

Cocarcinogenicity is demonstrated by Eulderink and van Rijssel (Pathologisch Laboratorium, Leiden, the Netherlands) by combined irradiation and implantation of nylon threads and steel wires in the alveolar sockets of mice.

Bollengier et al. (Yale University School of Medicine, New Haven, Connecticut) study the difference in susceptibility of four inbred strains of mice to testicular interstitial cell tumors and pi-
tuitary tumors after prolonged exposure to estrogens. Metabolism of the estrogens does not seem to differ in the four strains.

**October**

In a six-year study of 220 cancers diagnosed in children under 15 years of age in central India, Grover and Hardas (Medical College, Nagpur, India) report a high frequency of Hodgkin's disease, chronic leukemia, retinoblastoma, and oropharyngeal carcinoma, and a low frequency of neuroblastoma. Data from the other part of the Indian subcontinent show considerable variation in the incidence of childhood cancer according to cell type.

Comparing the mortality rates from retinoblastoma among Negro and white children in the United States, Newell and associates (Tulane University, New Orleans, Louisiana) suggest that the excess mortality among Negroes is due to delayed diagnosis, with less favorable response to treatment.

Creagen and Fraumeni (National Cancer Institute), in an 18-year study of cancer mortality among American Indians, find that gallbladder cancer is the only site in which mortality among Indian males and females is significantly higher than that among whites and blacks. Indian females have an excess in mortality from neoplasms of the thymus, nose and paranasal sinuses. Deaths from cancer of the cervix are significantly higher than in whites and approximate the high risk for blacks. The favorable cancer mortality for Indians may be related to their high frequency of diabetes, since other population groups have shown a negative correlation between cancer and diabetes.

By exposure to Concanavalin A (Con A) without serum, Mackler (Kennedy Institute of Rheumatology, London, England) increases the thymidine incorporation levels of human lymphocytes. In two human lymphoid cell lines, Con A without serum augments the levels of thymidine incorporation. Mitogenic and cytotoxic effects of Con A are assessed by the level of DNA synthetic activity and the number of cells surviving in culture.

Haenszel and co-workers (National Cancer Institute), in a statistical study of 220 Japanese patients with stomach cancer in Hawaii and 440 hospital controls, report that Japanese migrants from prefectures with the highest stomach cancer risk in Japan have an excess risk in Hawaii, but this risk does not persist among their offspring. This suggests early exposures as critical in the etiology of gastric cancer. Elevated risks are associated with the ingestion of pickled vegetables and dried or salted fish.