Reporting on Cancer Research

Commentary on the July and August 1972 (Volume 32, Numbers 7 and 8) issues

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July

Lucia J. Dunham (National Cancer Institute, Bethesda, Maryland) makes a brave attempt to review the subject of precancerous lesions of skin and mucous membranes. She suggests seven categories, arranged according to the types of environment supplied by the specific injury or disease. The data from published literature underline that many of the presently held concepts are based upon sparse clinical and pathological descriptions on selected, undefined sources.

Better knowledge about precancerous lesions of the skin and mucous membranes may point to extensions to other tissues. Detection and elimination of precancerous lesions would allow therapy before confrontation with overt cancer, and may provide etiologic information that could be exploited toward reversal of the process. A scientific approach to the subject of precancer will necessitate the systematic acquisition of new data. In such studies, as in many other areas of cancer research, a team approach is essential. Such a team should include epidemiologists and biometricians, clinicians and pathologists, who would devise the questions, plan and perform the studies, and learn to communicate between the languages of each discipline.

Robert Kroes et al. (National Cancer Institute, Bethesda, Maryland) present the intriguing finding of the appearance of an embryonic serum globulin, $\alpha$-fetoprotein (AFP) in rats within three weeks of feeding with a hepatocarcinogen (3'MDAB), before hepatomas are morphologically evident. A noncarcinogenic hepatotoxin did not elicit the appearance of AFP.

The work indicates a "biochemical lesion" in the liver associated with one type of malignancy that precedes the appearance of overt tumor. In areas of high risk to hepatoma, such as the Subsahara, one wonders whether the study of AFP in serum might lead not only to "earlier" diagnosis of hepatoma, but detect exposure to environmental hepatocarcinogens such as aflatoxin.

C. A. Bowles et al. (Hazleton Laboratories, Vienna, Virginia) report on the establishment of a transplantable mast cell tumor in newborn beagles without immunosuppression of the recipient dogs. Reproducibly transplantable tumors in dogs are a welcome addition to experimental materials available for cancer investigations.

Joseph E. Sokal et al. (Roswell Park Memorial Institute, Buffalo, New York) studied the immune response of 27 patients with myelocytic leukemia, lymphosarcoma and osteogenic sarcoma to intradermal vaccination with a mixture of cultural cells and living Bacillus Calmette-Guerin (BCG). Delayed
hypersensitivity to antigens of the target cells was achieved in three-fourths of the patients, as well as general increase of cellular immune reactivity, with negligible morbidity. These are cautious steps toward the possibility of active immunotherapy in human neoplastic disease.

**August**

One of the truly great contributions of cancer research to biomedical sciences is the development of inbred strains of mice. The late C. C. Little was one of the pioneers who saw the need for genetically defined animals for cancer research, and who founded the Jackson Laboratory for this purpose.

John Staats (Jackson Laboratory, Bar Harbor, Maine) has prepared for an international committee the fifth listing of a standardized nomenclature for inbred strains of mice. The listing contains 244 entries, as compared with 124 in the first issue of 1952. It is invaluable current information for anyone who is working with mice, or anyone who is considering using this most convenient small animal. The listing includes description of the main attributes of the strain, such as genetic traits, biochemical polymorphisms and occurrence of neoplasms. It also gives relevant references to the derivation and use of the strains, and where they can be obtained.

Urs E. Nydegger and Rene E. Butler (Blood Transfusion Service, Berne, Switzerland) quantitated serum lipoproteins in 122 patients with cancer and 186 normal people. Alpha 1-lipoproteins, phospholipids and cholesterol were significantly decreased in cancer patients, including some with preinvasive cancer of the uterine cervix. The decrease was independent of age, sex, state of nutrition, organ site or treatment. Triglycerides, esterified fatty acids, and beta-lipoproteins were not decreased in cancer patients.

The interpretation of these findings are obscure at present, but suggest the need for a prospective study of tumor incidence among populations in whom lipoproteins are being determined for relationships to cardiovascular disease.

George B. Feldman et al., (Harvard Medical School, Boston, Massachusetts) publish a neat study on a murine ovarian carcinoma with ascites that indicates that ascites is due to lymphatic obstruction by tumor cells. They thus confirm lymphatic obstruction as the pathogenesis of ascites in ovarian carcinoma, as suggested by Holm-Nielsen in 1953, rather than being due to an increased rate of production of ascitic fluid.