Higginson Responds

Dr. Bross failed to appreciate the main thrust of my lecture, namely that of the etiological factors identified in human cancer the most important by far to date are largely related to cultural habits, e.g., cigarette smoking, excessive ingestion of alcoholic beverages, and over exposure to sunlight. I believe it was made adequately clear in my presentation that some cancers result from exposure to other stimuli in the chemical environment, factors over which the individual himself has no control and which clearly are the responsibility of the government and the community. Certain occupations have been shown to carry a cancer hazard or other health risks, e.g., injury, toxic poisonings, etc. In most modern states various legislative measures have been introduced to control these risks.

Unfortunately, for many cancers in developed countries whose incidence has not changed markedly over the last several decades the cause is unknown, but circumstantial evidence indicates that they are related in some way to our modern "life style" which includes dietary patterns, etc.

Certainly, the concept of "life style" is scientifically unsatisfactory and it is obviously necessary to define its meaning in more objective biological, physical and chemical parameters, but to equate it, as Bross does, only with the chemical environment of the post-industrial society is contrary to the available data. If Bross can show that there is evidence that other risks are of greater significance than those cultural habits mentioned, he should supply this information in the appropriate manner. At present, lung cancer is responsible for approximately one-third of male deaths in the United States, and for 40 per cent of those in the United Kingdom.

Dr. Bross and others with similar views bear a heavy responsibility to society in trying to divert limited resources and public attention from the most important cancer producing stimuli. All epidemiologists know that cigarette smoking is followed by damage to health—if Dr. Bross chooses to regard this opinion as implying "punishment for original sin" it does not distress me in view of my Calvinistic upbringing.

Naturally, the knowledge of these important stimuli does not absolve those who have responsibility for community health from ensuring that all possible efforts are made to control these and other identifiable hazards, as I stated in my lecture.

John Higginson, MD
Director
International Agency for Research on Cancer
Lyon, France

On Role of Radiation in Leukemogenesis

The article by Jacobson, Plato, and Frigerio1 is an interesting presentation. The purpose of the exposition was to examine the safety of the current radiation guide by attempting to show that natural radiation doesn't play a significant role in leukemogenesis. If this were demonstrated it might be possible to disregard small increases in man-made radiation exposures at about the same level as background.

Perhaps the existing guide of 170 mrem/year above background is adequately protective of public health. However, the crude analysis presented in the paper does not provide adequate scientific support for such a conclusion. There are a number of disturbing questions which might be raised about the analysis but the following two are believed to be most significant:

1. The correlation of background radiation, by state, with age-adjusted death rates for all leukemias for white and non-white males and females separately represents a gross oversimplification. The authors contend that the relationship between radiation dose and leukemia can be addressed exclusive of related factors such as environment, sex, age, and race. The authors make allowances for age, sex, and race, but their failure to adjust for state differences in environmental factors could easily mask any radiation effect. Hoover, et al., present a discussion of these factors and their effect on cancer mortality in which the effects of two factors, urbanization and social class, are numerically estimated for leukemia. For white males, the age-adjusted leukemia mortality rate was 7