Cancer Patterns in Different Racial/Ethnic Groups

Shun-Zhang Yu¹ and Hiroyuki Shimizu²

Cancer patterns in different racial/ethnic groups in different areas were presented at a symposium in the 14th International Scientific Meeting of the International Epidemiological Association; Koreans in Korea and Los Angeles, Japanese in Japan and Sao Paulo, and Chinese, Indians and Malays in Singapore. The findings from these descriptive epidemiology suggested the effects of environmental factors in the etiology of various cancers appear during relatively short period at least in a generation. Comparison of hormonal profiles in populations at the extremes of incidence of prostate cancer, which shows one of the remarkable racial/ethnic variation, indicated that the difference may be due to variation in testosterone secretion and testosterone metabolism. It was also suggested that these hormonal differences might be genetically regulated. Two case-control studies of breast cancer in Indonesia and Japan suggested that the risk factors for the disease are almost the same in the two countries but the investigators found large differences in the stage and age at diagnosis of the cancer.

Large international difference in incidence rate for cancer shows an important role of environmental factor in the etiology of the cancer and it stimulates the investigation of risk in immigrant population. In this symposium we discussed cancer patterns in different racial/ethnic groups in relation to some environmental and genetic factors as well as comparison of the incidence rates themselves.

Professor Ahn of Seoul National University reported the incidence rates of cancers among Koreans in Los Angeles that is one of the large immigrant populations from Asia (300,000 persons). He presented the low incidence rates of cancers of stomach and liver compared with those in Koreans in Seoul for both sexes. The incidence rate of Korean females in Los Angeles was almost half the rates in Korean females in Seoul. Since about 60% of Koreans in Los Angeles is recent immigrants (within 10 years), effect after immigration may appear during relatively short period unless immigrant population was highly selected.

Dr. Tsugane of National Cancer Center Research Institute, East, Japan discussed cancer patterns and lifestyles among Japanese immigrants in Sao Paulo, Brazil. Japanese population in the city of Sao Paulo is estimated to be 290,000. The incidence rates of stomach cancer among Japanese in Sao Paulo is lower than that in Japanese in Japan. Prostate cancer and female breast cancer incidences were high in Japanese in Sao Paulo compared with those in Japanese in Japan. However, they could not observe large changes in these rates in Japanese immigrants (including their descendants) as one can observe in Japanese immigrants to the United States. Japanese in Sao Paulo still have traditional Japanese food like pickled vegetables, miso soup, and soy products although their dietary habits shifted to those in Western countries in general.

Singapore is a proper place for the study of cancer patterns in different ethnic groups. Professor Lee of National University of Singapore compared the incidence rates among Chinese, Malays and Indians in Singapore. The proportion of inter-eth-

¹Institute of Preventive Medicine, Shanghai Medical University, Shanghai, China.
²Department of Public Health, Gifu University School of Medicine, Gifu, Japan.

Address for correspondence: Hiroyuki Shimizu, Department of Public Health, Gifu University School of Medicine, 40 Tsukasamachi, Gifu, 500 Japan.
nic marriages is less than 5%. In Chinese, high risk site was nasopharynx, esophagus, stomach, colon, rectum, liver and lung. High risk sites in Indians were mouth and cervix, and those in Malays were ovary and non-Hodgkin’s lymphoma. He pointed that Chinese females showed the high incidence rate of lung cancer, particularly adenocarcinoma, which cannot be explained by cigarette smoking. He also demonstrated that we can observe the increase in colorectal cancer and the decrease in cancers of stomach and esophagus in the population that were not born in Singapore but migrated from their homelands, i.e. the changes were clear in a generation.

Prostate cancer is one of the cancers which showed a remarkable racial-ethnic and international variation in cancer incidence. Professor Ross of University of Southern California demonstrated that Asian-American men have prostate cancer incidence rates substantially above those of men in their homelands, but even among highly acculturated Asian-Americans such as Japanese in the US, rates remain well below those of US whites and blacks. He and his group have conducted a series of hormonal profiles in populations at the extremes of prostate cancer risk, and he suggested that differences in prostate cancer incidence among Japanese and Chinese, and US whites and blacks, are due to variation in testosterone secretion and testosterone metabolism. Furthermore, they began to evaluate whether these hormonal differences might be genetically regulated.

Professor Cornain presented two case-control studies of breast cancer conducted in Indonesia and Japan and compared the risk factors obtained from these studies. He and his group found few differences in the risk factors between them, but they found large differences in the stage and age at diagnosis of the cancer; Indonesian breast cancer occurred more frequently at younger age group and the majority was at advanced stage. They investigated dietary habits at the time of interview and a few decades prior to the interview for both cases and controls, and found big change in the dietary habits before and after marriage. They suggested that the change may be important in the etiology of breast cancer.

The distributions of the patients at diagnosis aroused interest of audience. Some of them additionally reported that age distribution of cancer patients in developing countries shifts to young compared with those in developed countries. They emphasized that further studies on the age distribution would be important to know risk factors for several sites of cancer, but the differences in the age distribution may be apparent one. For example, few old patients with cancer may visit hospitals and have an diagnosis of the disease in developing countries although health care and diagnosis system is well established for both young and old persons in developed countries.

The other topic is whether we should conduct more detailed descriptive epidemiology in the incidence rates of various sites of cancer in the other different ethnic groups. Some of the participants emphasized that these studies in India or China focusing on small ethnic groups would be fruitful in future. However, some thought that we had already had enough information from such kind studies and we, epidemiologists, should introduce a novel idea and develop a new method to have a good place in the field of cancer etiology.

One of the new fields which we must challenge may be molecular epidemiology. For example, Professor Ross presented some possibilities that we may be able to explain the racial differences in incidence of prostate cancer by some genes. The era of molecular biology may continue for a decade or so even in the field of epidemiology, while we must always take account of the possibility that changes observed in genes may sometimes be affected by environmental factors.