

## The Role of Research Institute of Tropical Medicine in Studies of Immunopathological Aspects in Cancer Epidemiology

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In cancer epidemiology, the relationship between the development of cancer and its distribution was analysed in respect to group of individuals or population, geographical area, environment, lifestyle and various risk factors. It appeared that international differences in cancer incidence were not due to inherited difference between populations. Certain type of cancer might occur more frequently in certain age group or varied in different geographic areas or ethnic groups. Such phenomenon was observed when comparing the developed to the developing countries as well, i.e. Burkitt lymphoma, nasopharyngeal cancer and choriocarcinoma, melanoma etc. Therefore, studies of the pathophysiological aspects / immunopathological aspects are important.

It deals with basic information related to the distribution pattern, the role of both the intrinsic and extrinsic factors, and the mechanism of related reactions in tumor biology. Intrinsic factors including the hormonal status, immune status, HLA antigen system and oncogenes have been recognized to play certain roles. This, genetic differences among population in tropical countries might cause certain differences in cancer risk. Immunodeficiency has been to known increase the risk, both in adults and in children.

Extrinsic factors including tobacco, alcohol, diet and food additives are similarly encountered both in developed and developing countries. It is also true for occupational exposures i.e. asbestos (mesothelioma & lung cancer) and vinylchloride (angio carcinoma of liver), and exposure to ionizing radiation and ultraviolet light (skin cancer). The situation of such environmental factors might differ relative to geographical areas or ethnic groups.

Similarly, the pattern of infection of viruses causing cancers might determine the difference in their incidence, i.e. hepatitis B and C virus (liver cancer), Epstein-Barr Virus (Burkitt lymphoma, nasopharyngeal carcinoma), human papilloma virus (cervical and genital cancer), human T leukemia virus type I (HTLV-1) (adult T-cell leukemia). The studies has been recently enhanced by the application of molecular epidemiological method.

The above mentioned approaches have been exemplified by collaborative studies between Japan and Indonesia in the relationship between hepatitis B & C viruses and primary liver cancer, HTLV-1 and lymphoma/leukemia.