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C O N T E N T S

CHAPTER I

INTRODUCTION

INTRODUCTION

Cancer is now a single disease, but is rather a pathological process common to a very heterogenous group of diseases differing widely in aetiology, in frequency, in pattern of geographical occurrence and in clinical behaviour and manifestations, as well as in diagnostic and therapeutic problems which they present.

Cancer is an important problem all over the world, especially in developed countries, where the conquest of malnutrition, infections and parasitic diseases has lead to more aging of the population with prolongation of the period of exposure to the risk of carcinogens. Also, many carcinogenic hazards accompany industrialization and urbinization and so, the carcinogenic impact is increased by modern civilization. Besides, in developed countries, the improved medical services, result in the diagnosis of more cancer cases. Because of the increasing importance of cancer in these countries, the governments there, are organizing cancer registry to have more knowledge about cancer aetiology, prevention and control.

In developing countries, on the other hand, cancer is not yet a major health problem to compare with nutritional, infectious and parasitic diseases. However, it is certainly going to become a prominent challenge in these countries when sanitation and medical services assume higher standards and the mean age of the population becomes substantially increased. Also, the increasing industrialization in these countries, will add to the risk of the hazards of carcinogens. Hence, the problem of cancer in developing countries should receive much attention, from the preventive medicine point of view.

The methods of studying the problem of cancer are essentially epidemiological, clinical and basic research methods.

The epidemiological study provides data derived from statistical and field studies, associating between cancer and the various characteristics of the population, such as age, sex, religion, residence, marital status, genetic factors, occupation, social class, dietary and smoking habits ...etc.

The epidemiological method of cancer study, must be integrated with clinical data, the clinical methods of study differ for different sites and types of cancer. They may include inspection of skin and accessible body cavities,palpation of various body organs, pathological studies, radiography, radioisotope studies including topographic and dynamic studies, as well as the use of various types of physical energy, e.g. heat and sound.

The last method used in studying cancer problem is basic research. Epidemiological studies usually lead to the development of a hypothesis that can be tested by laboratory methods. However, in the field of cancer, experimental proof is usually neither concrete nor ethical to obtain, because it is not possible to reproduce the conditions of human exposure in the laboratory animal and there is no certainty that any one animal reacts to a carcinogenic agent in exactly the same way as man does. Furthermore, ethically, and from humanistic points of views, the public opinion does not accept adapting experimental methods of study on human beings.

Since cancer, particularly from the epidemiological view-point is rather a family of related diseases and not

In a single disease, the term epidemiology of cancer is rather a misleading one. This term can be considered very similar to the term "Epidemiology of infectious diseases". Actually each type of cancer, for e.g. cancer bladder, cancer breast and cancer lung, like each type of infectious disease, has its own epidemiology. The classical type of epidemiological studies is the "Descriptive Epidemiology", which is concerned with the study of the variations in frequency of a particular cancer according to the population characteristics. It permits the development of hypothesis concerning the oetiological factors. "Analytical Epidemiology" on the other hand, deals with the examination of the hypothesis concerning the aetiology of the disease, e.g. cancer lung and cigarette smoking, oesophegeal cancer and alcoholism, myeloid leukaemia and ionising radiation. Furthermore, epidemiology provides the scientific basis for developing and conducting disease control programs. Thus, epidemiological data are used to estimate the extent of the problem and for such control measures such as case finding and the early detection of affected individuals.

The volume of the problem of cancer in any country may be gauged from the mortality rate (M.R.) of malignant

neoplasms in this country. The crude M.R. from cancer in A.R.E. in the census of 1960 is 99.4/100 000. This rate in Sweden for the same year is 185.7/100 000, i.e. is more than 2 times that of A.R.E. However, Shawky (1965) demonstrated that when we take into consideration the difference in the age composition of both populations, we find that the standardised M.R. for the A.R.E. is 69.0/100 000, i.e., the low figure for the crude M.R. from cancer in A.R.E. is in part, only apparent.

Another way for assessing the problem of cancer is by "Cancer Registry". In A.R.E., up to the present time, it is difficult to set up a national cancer registry, because of the relative lack of proper statistical and clinical recording information resources. A national cancer registry requires that the reporting of all cancer cases should be complete a requisite which is difficult to achieve in our country.

The objectives of this work are twofold, viz :

1) To measure the relative frequency of the different types of cancer encountered in our country. This may throw some light on the most frequent cancers among our population,

but it is not a measure for the risk of morbidity or mortality among them.

2) To utilize all the informations collected to portray a picture of the ecology of three important cancers in the A.R.E., namely, cancer bladder, cancer breast and cancer cervix.

REVIEW OF LITERATURE

(1) Historical Review

Cancer is not a new disease and the first to document its existance were the Ancient Egyptians. Calvinwells (1963) described an Egyptian speciment of cancer of nasopharynx, present in the Duckworth Laboratory, University of Cambridge (Accession No. 236) dating from the third to the fifth dynasty (The Old Kingdom - Pyramide Age) nearly 5000 years old. Another information about cancer was recorded in the Ebers Papyrus, 3000 - 4000 years B.C.

Hippocrates (C. 460 - 377 B.C.) defined cancer as a descriptive term for all new tissue formation which could not be cured.

The first systemic collection of cancer statistical material seems to have been made when a general census was attempted in London (1728) as stated by Clemmesen (1965).

In Verona in Italy, mortality statistics started in (1760 till 1839). From these statistics, Stern (1842) studied the mortalities of breast and uterine cancer.

Percival Pott (1775) identified and described the first recorded occupational cancer. It was cancer of the scrotum, among chimney sweepers.

In Paris, Tanchou (1843 - 1844) reported upon cancer deaths and arrived at the conclusion that " the cause of cancer is complex and is neither completely internal nor completely external".

Walshe (1846) reviewed cancer occurrence in Hobart, Calcutta, China, Egypt, Algeria, Sengal, Copenhagen, Massachusett and New York.

By the late twenties , additional developments occurred. The Register General of England and Wales (1927 - 1938) analysed the social, occupational and regional aspects of mortality, and subsequently international comparisons of the distribution of disease were stimulated by the periodic conferences of the "International Society of Geographical Pathology".

Around the beginning of the twentieth century, efforts were made to know the prevalence of cancer in some countries. A census of cancer patients was made in Germany(1900),

By 1945 the increase in the recorded mortality from lung cancer had become so marked that the disease began to take the characteristics of an epidemic and it appeared obvious that the prevalence of some causal factors in the environment must have also increased. In 1950 reports were published on the relationship between lung cancer and cigarette smoking (Wynder et al., 1950).

Attention was drawn to the importance of personal habits in the production of cancer by Neve (1924). He described the "Kangri" cancer of India. Inhabitants of certain areas in India were in the habit of carrying a heated brick against their abdomen for wormth in winter. The scars resulting from the burns often developed into cancer. Clemmesen (1965) found high ratios of cancer of upper alimentary canal among waiters and barmen , and he attributed this to the influence of alcoholics consumption.

<u>The history of cancer registry in U.S.A., Europe and Some Developing Countries with special reference to A.R.E.:</u>

In U.S.A. cancer registry started in Massachusetts in 1927. In Connecticul and New York states registration started in 1941. It was followed by California Cancer Registry in 1949 and Pensylvania Cancer Registry in 1948 (W.H.O. 1959).

The registries in the U.S.A. are reported by the State Health Department.

In Europe, cancer registry was first established in Mecklenbern (1937). A regional cancer registry was established in France in 1943 and in England in 1945 (W.H.O., 1959).

National cancer registries were established first in Denmark (1942), then in Norway (1952) (Pedersen & Magnus, 1959), in Finland & Belgium (1953) (Saxen & Korpela, 1958), in Iceland & Netherlands (1954), and in Sweden (1958) (Ringertz et al., 1960).

In England & Wales and in France, the cancer registry was created and financed by the central administration. The Netherlands registry is operated by the National Anti-Cancer Association. In the Scandinavian Countries, it is the joint effort of the National Anti-Cancer Association and the Health Authorities.

Outside Europe, a cancer registry was established in NewZeland in 1949 (W.H.O., 1959).