DEVELOPMENT OF AN ATLAS OF CANCER IN PUNJAB STATE

Report for the years: 2012-2013

Executive Summary

The present account on the project on "Development of an Atlas of Cancer in Punjab State" is the First Report covering the calendar years 2012 and 2013. Under this project, a cost-effective design and plan using advances in modern electronic information technology, was conceived, to collate and process relevant data on cancer. This was mainly to have an idea of patterns of cancer in parts of the Punjab state not covered by the registries under the National Cancer Registry Programme (NCRP) of the Indian Council of Medical Research (ICMR). Wherever possible, it was also envisaged to calculate estimates of cancer incidence.

Knowledge of patterns of cancer is important to know what type of cancer is occurring where and if possible how much and to what extent. Only this will provide a background to search answers to questions related to causation of cancer, a baseline for undertaking, monitoring and evaluation of cancer control measures and an environment for administering optimum care and measuring outcome.

The data that has been collated by the NCRP over the years has shown that over 80-85% of registered cases of cancer has a microscopic diagnosis and that over 70% of cancers are treated with radiation singly or in combination with other forms of cancer directed treatment. Accordingly, the basic principle of working in this study was to have the departments of pathology and radiation oncology (in medical colleges and hospitals) as the main points of capture of information on cancer cases. However, several other clinicians working in oncology actively collaborated.

Accordingly, all medical colleges, pathology labs, civil hospitals and individual oncologists throughout the state were contacted for their interest to collaborate in the project. Those who responded were supplied with core forms for collecting basic information (mainly patient identification details including area of living and site and morphology of tumour) and provided guidelines for collecting this information on all malignant cases reported in the department of pathology from 2011. Visits were made to these potential collaborating centres and on the spot instructions given. During the visits their need for support was assessed depending on the infrastructure and average number of malignancies reported per annum and data collation provided. Intense training workshops in different regions of the state were held. Principles of cancer registration, data collation, transmission and fundamentals of epidemiology constituted the thrust areas of training at the workshops. The workshops and visits contributed a great deal to the success of the project.

As in the earlier project on "Development of an Atlas of Cancer in India" the internet was identified as the primary communication medium for collecting the data. Collaborating centres were given an individual login-ID and password with detailed instructions on entering the core patient information and steps for onward transmission. The data so transmitted was downloaded periodically at the Coordinating Centre of the NCRP – now the National Centre for Disease Informatics and Research. Data was also received from

MMPCRK patients. Several detailed checks were done on the data so as to meet international standards. Where needed, clarification was sought from individual centres. A variety of duplicate checks to ensure that no case was counted twice were also carried out. Strict inclusion criteria were adopted.

The regular accepted measures by cancer registries for analysis, tabulation and estimation of incidence rates were followed. In all there were a total of 33,940 cases for the two-year period (1 January 2012 to 31 December 2013) from 29 centres including the cancer registries under the NCRP and other functioning cancer registries. The district was taken as a unit for calculation of incidence rates. The advantage of using the district as a unit, was that these are reasonably well demarcated geographic areas where the five year age group population is available from the Census of India Publications. Thus the age adjusted incidence rates (that is normally used for calculation and comparison of incidence rates) per 100,000 population were calculated for each district. The district-wise incidence rates were compared with the incidence rates of the regular Population Based Cancer Registries (PBCRs) under the NCRP.

For all sites of cancer put together, in males, there were six districts (Bathinda, Mohali, Ludhiana, Jalandhar, Faridkot and Mansa) that had incidence rates higher than that of Patiala PBCR under NCRP. The corresponding number of districts in females was five (Bathinda, Faridkot, Mohali, Mansa and Ludhiana). None of the districts in males or females showed higher rates than that seen in North East PBCRs, but the rates in the above 5-6 districts were comparable with that of other PBCRs in the metros of India. Oesophageal cancer in males and females was an important leading site in many districts and was one of the five leading sites in females. However, the incidence rate of this cancer in both sexes was much lower than that seen in the North Eastern states and in males it was lower than that in Bangalore or Ahmedabad Urban. In females the corresponding incidence rate of oesophageal cancer was higher (8.9 versus 7.5) than that in Bangalore females who had the highest incidence among all PBCRs other than those in the North East. Apart from undertaking risk factor studies in the form of case control studies, one could also try pilot early detection projects. If successful such early detection exercises could be done across the state.

The incidence rates of multiple myeloma along with other lymphoid and haemopoietic malignancies appeared to be higher in some districts of Punjab compared to that seen in other PBCRs. Here also one needs to undertake case control studies.

Some of the other sites of cancer that show higher or comparably high incidence rates with the highest seen in other PBCRs in India are: in males: penile cancer (in Faridkot and Bathinda), prostate (Jalandhar), urinary bladder (Kapurthala, Jalandhar) and brain (Mohali and Mansa); in females: breast (Bathinda, Mohali), vagina (Bathinda, Ludhiana), ovary (Mohali) and brain (Moga and Mohali).