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## ORIGINAL ARTICLE

## FIRST CANCER STATISTICS REPORT FROM HAZARA DIVISION

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**Background:** ‘Cancer’ is on rise globally. Cancer registry is vital for policy making, resource allocation, progress tracking and overall cancer control. In Pakistan, cancer prevention, screening and standardised clinical trials, as well as quality assurance through surveillance are badly hampered due to the lack of a National Cancer Registry. For Pakistan a well-integrated system of Cancer Registry is need of the day.

**Methods:** This retrospective study was conducted on the hospital records at the Oncology Department of Ayub Teaching Hospital, Abbottabad from year 2007–12. Data were collected through a standard data capture form with a final figure of 555 patients. The malignancies were diagnosed clinically and histopathologically at different laboratories of Pakistan. **Results:** Among these cases, 54.08% were male and 45.92% female. Incidence of cancer in patients below 14 years age was 8.47% and 91.53% above 14 years. Majority (31.95%) cases were from Mansehra followed by Abbottabad with 27.08% and Haripur 14.26% cases. Leukaemias were at top with 15.14% cases followed by breast carcinoma (13.69%), Lymphomas (12.07%), ovarian carcinomas (8.65%), and gastric carcinoma and skin cancers with 2.70% each. Among men, the highest incidence was of Hodgkin’s lymphoma (14.9%) followed by lymphocytic leukaemia (14.3%). Prostate cancer was seen in 8.3% male patients. Another 5.7% patients had lung cancer. In women, the highest incidence was carcinoma breast (19.7%) followed by ovarian carcinoma (13.4%), leukaemia (9.7%), and Hodgkin’s lymphoma (4.3%). **Conclusion:** A variety of cancers are prevalent in the indigent population. Record-keeping in wards is sub-optimal. Commonest cancers in the area have slight differences with rest of the country.

**Keywords:** Cancer, Cancer Registry, Abbottabad, Hazara, Pakistan

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## INTRODUCTION

The epidemiological transition of diseases has occurred worldwide, shifting the causes of death and disability from communicable, maternal and prenatal to chronic non-communicable diseases.<sup>1</sup> Among the chronic illnesses ‘cancer’ is on rise globally.<sup>2</sup> Developing nations of the world are badly affected because of double burden of disease and lack of health facilities. Pakistan is not an exception to the expanding circle of cancer. Policy making and resource allocation are the key players in cancer control which in turn needs a standard National Cancer Registry.

Cancer registry is a systematic collection of data on cancer occurrence and its characteristics.<sup>3</sup> It ensures that timely, accurate, and complete data are maintained on all types of cancer diagnosed and/or treated within a healthcare institution or within a defined population. These data are then used to inform a wide variety of public health decisions and provide rich information for cancer diagnosis and treatment education.<sup>4</sup>

Population based cancer data is a fundamental requirement for cancer control programs. In 1973, the Surveillance, Epidemiology and End Results (SEER) Program of NCI established the first national cancer registry program.<sup>4</sup> In Pakistan we still don’t have a National Cancer Registry, though some registries like Karachi Cancer Registry (KCR) and Punjab Cancer

Registries are working in Isolation. KCR is the first population-based cancer registry in Pakistan established in 1995.<sup>5</sup>

A number of epidemiological studies have been conducted by cancer registry staff in Pakistan and data are available for Karachi (Bhurgri *et al*, 2000; 2002a), Quetta (Bhurgri *et al*, 2002c), Punjab (Aziz *et al*, 2003) Hyderabad (Bhurgri *et al*, 2005), and Rawalpindi (Jamal *et al*, 2006b). However, we cannot accurately estimate the percentage of deaths due to cancers at national level, despite it being the third leading non-communicable cause of mortality. Also, there are no statistics on survival rates (5 and 10 year), important when describing the epidemiology of any cancer. It will be interesting to record the percentage of the pre-malignant conditions transforming to cancers.<sup>6</sup>

There has been no report on Cancer Statistics from Hazara Division. This study will give an insight on Cancer trends in this part of the country.

## MATERIAL AND METHODS

A retrospective study was conducted on hospital records of patients at Oncology Department, Ayub Teaching Hospital (ATH) Abbottabad treated from 2007 to 2012. Data was collected on a Standard Data Capture Form. The variables recorded included file number, patients name, age, sex, address, diagnosis, family history of cancer, risk factors, biopsy, date of biopsy and name of the laboratory, treatment timeline, stage at presentation

and final outcome. Out of the 700 cases, only 555 patients' record was according to our standard data capture form.

Data was retrieved over a period of two months from January 2012–April 2012. Collected data was analysed with SPSS-16.

## RESULTS

Among 555 cases analysed, 54.08% were male and 45.92% were female. Cases under 14 years of age were 8.47% while cases above 14 years were 91.53%. ATH is the biggest Teaching Hospital in Hazara division covering a huge population. Majority (31.95%) of the cancer patients were from Manshara. The incidence of cancer in Abbottabad was 27.08% and from Haripur the reported cases were only 14.26%.

Top malignancies in both males and females, and all age groups are shown in Table-1. Among the varied list, leukaemias (15.14%) were top of the list breast carcinoma (13.69%) next to it. While 12.07% were Lymphomas and 8.65% ovarian carcinomas. 2.70% each were Gastric carcinoma and skin cancers.

Comparison between top most malignancies with respect to gender is shown in Table-2. Among men, highest incidence was Hodgkin's lymphomas (14.9%) with leukaemia (14.3%) 2<sup>nd</sup>. 8.3% male patients had prostate cancer and another 5.7% had lung cancer. Among females, highest incidence was of breast carcinoma (19.7%) followed by ovarian carcinoma (13.4%); 9.7% were having leukaemia and 4.3% had lymphomas.

In paediatric age group, lymphocytic leukaemia was top of the list with 52.5% proportion. Patients of Hodgkin's lymphoma were 25% while 7.5% each had myeloid leukaemia, sarcomas and non-Hodgkin lymphomas.

Highest incidences of 11.35% each were in age group 50–54 years and 60–64 years, while lowest incidence 5.41% each in age groups 20–24 years and 30–34 years.

Majority (34.06%) of histopathology examinations were done at Shaukat Khanum Hospital Laboratories, 17.47% were from Ayub Medical College Pathology Lab, 13.10% were from Aga Khan Hospital Labs, and 9.61% from Chughtai's Lahore Labs.

**Table-1: Prevalence of cancers in all age groups and both genders combined (%)**

Leukaemia	Ca Breast	Lymphoma	Ca Ovaries	Ca Prostate	Colorectal carcinoma	Lung Cancer	Hepatocellular Carcinoma	Sarcoma	Gastric Ca
15.14	13.69	12.07	8.65	5.41	4.32	3.78	3.06	2.88	2.70

**Table-2: Cancer Comparison by gender distribution**

	Lymphocytic Leukemia	Hodgkin Lymphoma	Ca. Breast	Ca. Ovary	Ca. Prostate	Colorectal Carcinoma	Lung Cancer
Male	14.30%	14.90%	1.7%	N.A	8.30%	4.30%	5.70%
Female	9.70%	4.30%	19.70%	13.40%	N.A	2.60%	0.30%

## DISCUSSION

Five million people succumb to cancer annually in low and middle income countries (LMCs), constituting 10% of their death toll. These figures are rising with strengthening epidemic of tobacco related cancers.<sup>1</sup> More than half of cancer death toll is in LMCs but even then, cancer is not a high-priority issue for these countries.<sup>7</sup> Since 1950, fewer than 20% countries have published their mortality data. About 35% of these countries have published population-based incidence data with less than half appearing in latest IARC's Cancer Incidence in Five Continents edition.<sup>8</sup>

In Pakistan, cancer data is being produced in pockets, i.e., for Karachi (Bhurgri *et al*, 2000; 2002a), Punjab (Aziz *et al*, 2003), Hyderabad Bhurgri *et al*, 2005), Quetta (Bhurgri *et al*, 2002c), and Rawalpindi (Jamal *et al*, 2006b).<sup>6</sup> Data concerning head and neck (Bhurgri *et al*, 2006b), gastrointestinal tumours (Mehdi 1998), breast (Badar *et al*, 2005; Bhurgri *et al*, 2007), Hodgkin's lymphoma (Siddiqui *et al*, 2006), retinoblastomas (Bhurgri *et al*, 2004a), and childhood malignancies (Jamal *et al*, 2006a) has also been published. However, no mortality or survival data exists

on national level, though Cancer is one of the biggest killers.<sup>6</sup>

In our study, 54.08% were male and 45.92% were female compared to 50.6% male in a study conducted at Karachi.<sup>8</sup> In our study, 91.53% of the patients were above while 8.47% were below 14 years of age compared to low incidence in paediatric population reported from Shaukat Khanum data where adults (age above 18 years) were 89.06% and children made 10.94% of the cases. Amongst females the common cancers were breast (45.46%), ovary and uterine adnexa (5.91%), and lip-oral cavity (4.82%), compared to our study with top malignancies being breast cancer (19.7%), ovarian cancer (13.4%) and lymphocytic leukaemia (9.4%).<sup>9</sup>

The data of another study (1998–2002) showed a rising incidence for lung cancer (25.5%), larynx (11.8%), and urinary bladder (9.9%) in male population; and breast cancer (69.1%), oesophagus (8.6%), and cervix cancer (8.6%) in females.<sup>10</sup> In Data from 1<sup>st</sup> January 1998 to 31<sup>st</sup> December 1999, the Karachi Cancer Registry received 1,077 cancer notifications from Quetta with commonest cancer in

both genders being cancer oesophagus with significantly low reporting of cancer breast.<sup>11</sup> A study from Faisalabad shows cancer predominance in elderly men with lymph nodes (16.6%), prostate (15.5%), urinary bladder (10.8%), skin (9.3%), and vocal cords (6.5%). Neither skin nor cancer bladder was in top rankings in our data. The data from women with 33.0% cases of breast cancer, 6.5% lymph nodes, and 6.2% ovarian cancers were somewhat comparable to our study.<sup>12</sup> Data from Aga Khan Hospital shows that overall percentage of malignant neoplasms is commonest in 5<sup>th</sup> and 6<sup>th</sup> decades of life. Most common neoplasms in first decade were Hodgkin's lymphoma and Wilm's tumour in males and females respectively in contrast to our study with Hodgkin lymphoma standing second (25%).<sup>13</sup>

According to the cancer projections of India the total cancer cases are likely to go up from 979,786 cases in the year 2010 to 1,148,757 cases in the year 2020.<sup>14</sup> Among the Asian countries the highest incidence rates (age-standardised) for total cancer (all sites) in males are in Taiwan, Korea, and Japan; female total cancer incidence rates are highest in Taiwan, Singapore, and Philippines. In our study, female patients are lesser which could be due to under reporting.

Cancer is the second most common cause of death in the US, exceeded only by heart disease, accounting for nearly 1 of every 4 deaths.<sup>15</sup> It is evident that incidence of cancer is increasing. Diseases don't acknowledge political boundaries; therefore, it is not the concern of a few nations. Global efforts and co-ordination are required to beat cancer.

## CONCLUSION

Cancer trends in Hazara are similar to other studies in Pakistan with few differences. Data management is sub-optimal. Reliable data for evidence based decisions can only be attained once a National Cancer Registry is established. Missing and duplication of cancer cases are two extreme disadvantages with multiple, disconnected, local cancer registries as in Pakistan. There is need for streamlining cancer data management in the country.

## RECOMMENDATIONS

- The government or any volunteer party may serve as a central liaison office for the individual cancer registries.
- The individual cancer registries' data may be

incorporated to the respective provincial registries, and then combined to give a national picture.

- Capacity building on how to record cancer patients' data should be ensured.

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