Institution Based Cancer Registry from Jammu, India: Five Year Data Based Analysis

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Abstract

Introduction: Incidence and mortality rates of non-communicable diseases have increased remarkably both in high as well as middle-income countries. According to International Agency for Research on Cancer (IARC) 2022 report, new cancer cases are at 20 million while deaths were 9.7 million globally.

Materials and Methods: The data collected by Hospital Based Cancer Registry (HBCR) during 2018 to 2022 for five years was analysed. The five year data was analysed on the basis of sex, age group, predominant cancers among males and females and on stage of presentation. The data was also analysed on the basis of district-wise prevalence of the cancer patients.

Results:A total of 9630 patients were registered during the five year period of 2018-2022 with males being 56.4% of the total patients. 44% of the respondents were in 60-80 year age group while 39% were in 40-60 year age group. Regarding stage of patients at presentation, 48% were in stage IV while 27% in stage III. It was found that overall lung cancers comprised the maximum cases followed by head and neck, breast cancer, hepatobiliary, genitourinary, hematological etc. in descending order.

Conclusion: The results have revealed that lung, head and neck and genitourinary were top three cancers among males while breast, cervix and other gynaecological were top three cancers among females. Further, 75% of the respondents reported at stage III and stage IV of the disease. Although population based cancer registry is not yet set up in this region, the present study data by HBCR proves to be beneficial for future health planning an research.

Key Words: Cancer, Hospital based data, Hospital based cancer registry

INTRODUCTION

Incidence and mortality rates of non-communicable diseases have increased remarkably in high and middle-income countries.[1] Cancer is a non- communicable disease, which has more dramatic prevalence rather than others. Recent reports have indicated that global burden of cancers is increasing. According to the Golobocan (2012), there were 14.1 million new cancer cases, 8.2 million cancer deaths and five-year prevalence of 32.6 million patients living with cancer worldwide.[2] Almost 57% (8 million) of new cancer cases, 65% (5.3 million) of the cancer deaths and 48% (15.6 million) of the 5-year prevalent cancer cases occurred in the less developed regions.

Since mortality to incidence ratio is high for several cancer types, especially in the low and middle-income countries, early detection and improvement of cancer care are necessary to decrease the burden of cancer. Appropriate methods for diagnosis and treatment of cancer are one of the effective factors in cancer control (Organization, 2007).[3] There are several guidelines about diagnosis and treatment of cancer including clinical practice guidelines provided by of the National Comprehensive Cancer Network (NCCN), the National Institute for Health and Care Excellence (NICE), the European Society For Medical Oncology (ESMO) Guidelines, the American Society of Clinical Oncology (ASCO) and etc.[4] However different institutions may choose from these guidelines to provide diagnosis and treatment services for cancer patients. In addition, they may also adapt them according to the local situation and evidences. HBCRs are important tool to evaluate the implementation of the guidelines and also study treatment outcome for the selected protocols and provide evidence for changes and updates of the treatment protocols.[5]

Tumor Registry Program in India:

Cancer registry is an organization of systematic collection, storage, analysis, interpretation and reporting of data on patients with cancer.

It provides an economical and efficient method of ascertaining cancer occurrence rather than intervention trials and cohort studies.

In India

The National Cancer Registry Program (NCRP) ICMR with its network of cancer registries was started in 1981 with coordinating Centre at Bengaluru.

Presently, it is operated by ICMR-NCDIR (National Center for disease information and Research), Bengaluru.

It provides data on:

- Cancer incidence

- Mortality
- Pattern, trend & geo-pathological distribution of cancers

Also it helps to formulate & implement policies and programs along with monitoring & evaluation of cancer control activities.

MATERIALS AND METHODS

Two types of cancer registries:

Population Based Cancer Registries: records new cases in a defined population within a geographic area.

Hospital Based Cancer Registries: records information on cancer patients attending a particular hospital.

Presently, there are 36 PBCRs and 236 HBCRs registered under National Cancer Registry Program.

HBCR in GMC Jammu:

The information is collected in a core form by our HBCR staff.

Entered into a software provided by ICMR-NCDIR.

Regularly published in ICMR-NCDIR Directory.

The data is further transmitted by ICMR-NCDIR to International Agency for Research on Cancer (IARC).

Regularly published in successive volumes of Cancer Incidence in 5 continents (CI 5) published by IARC.

RESULTS

HBCR, 2018-2022

In the year 2018-2022:

Total cancer patients registered: 9630

Males - 5440

Females – 4190

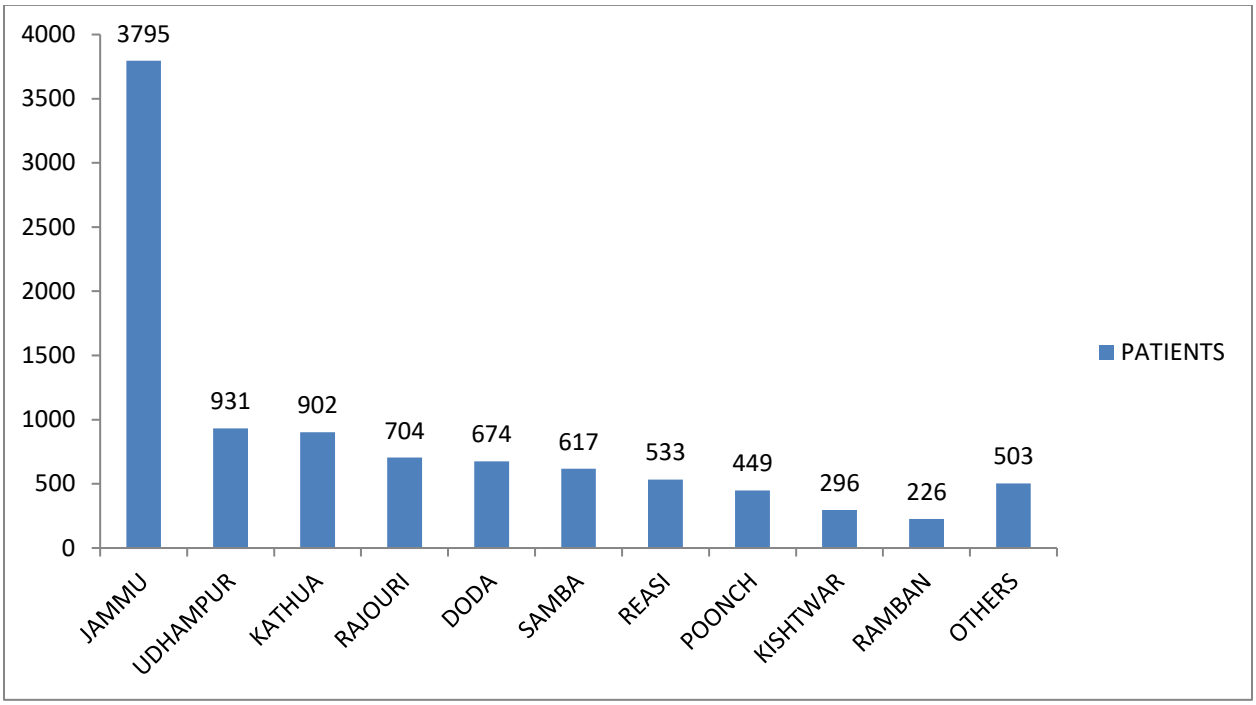
As per the Hospital based cancer registry, total number of cancer patients registered from the year 2018 to 2022 were 9630 out of which 5440 patients were males and 4190 were females.

Table 1: District Wise Distribution of Cancer

DISTRICT	PATIENTS	PERCENTAGE (%)
JAMMU	3795	39.4
UDHAMPUR	931	9.66
KATHUA	902	9.36
RAJOURI	704	7.31
DODA	674	6.99
SAMBA	617	6.4
REASI	533	5.53
POONCH	449	4.66
KISHTWAR	296	3.07
RAMBAN	226	2.34
OTHERS	503	5.22
TOTAL	9630	

Table 1 shows the district wise distribution of cancer patients in Jammu province with highest number of patients (39.4 %) from Jammu district.

Graph 1: District Wise Distribution of Cancers



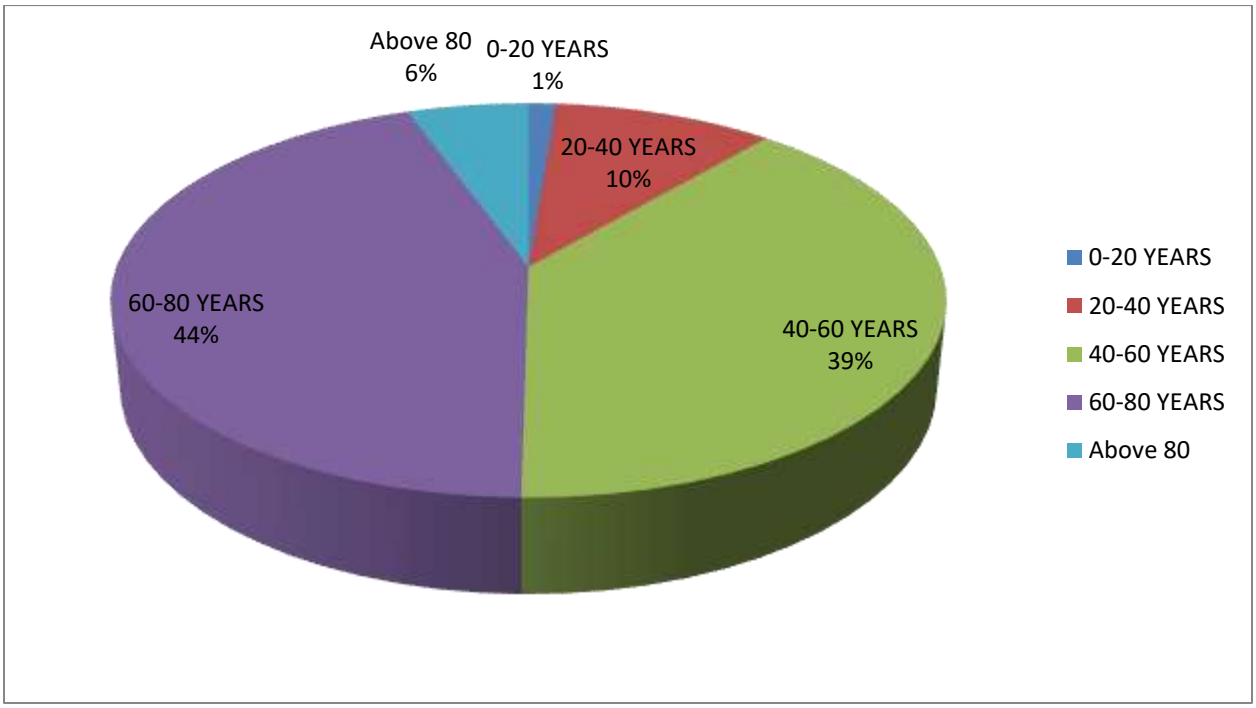
Graph1: A bar graph representing the district wise distribution of cancer patients in Jammu province with highest number of patients (3795) from Jammu district.

Table 2: Age Distribution of Cancers

AGE GROUP	PATIENTS	PERCENTAGE (%)
0-20 YEARS	121	1.25
20-40 YEARS	967	10.04
40-60 YEARS	3749	38.93
60-80 YEARS	4261	44.24
ABOVE 80	532	5.52
TOTAL	9630	

Table 2 shows the age wise distribution of various cancers where1.25% patients were in the age group of 0-20 years whereas 44.24 % patients were in the age group of 60-80 years.

Graph 2: Age Distribution of Cancers



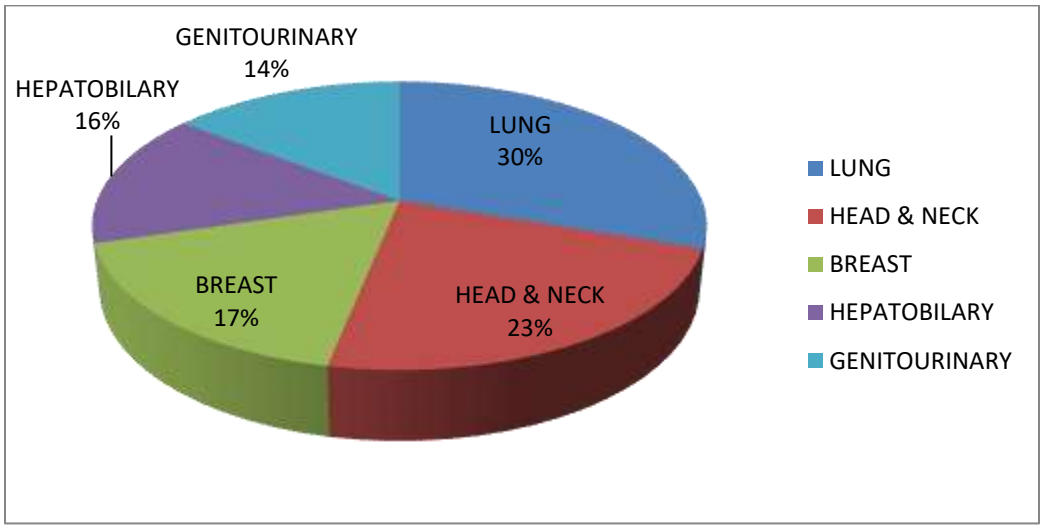
Graph 2 represents the age wise distribution of various cancers with lowest percentage of patients in the age group of 0-20 years while highest percentage of patients were in the age group of 60-80 years.

Table 3: Cancer Distribution Site Wise

DIAGNOSIS	PATIENTS	PERCENTAGE (%)
LUNG	1370	14.22
HEAD & NECK	1035	10.74
BREAST	775	8.04
HEPATOBILARY	686	7.12
GENITOURINARY	658	6.83
HAEMATOLOGICAL	602	6.25
ESOPHAGUS	589	6.11
CUPS	507	5.26
CERVIX	537	5.57
GYNAECOLOGICAL	514	5.33
ORAL	477	4.95
INTESTINAL	455	4.72
LYMPHOID	330	3.42
STOMACH	266	2.76
BRAIN	216	2.24
PROSTATE	202	2.09
SKIN	144	1.49
BONE & SOFT TISSUE	137	1.42
OTHERS	130	1.34
TOTAL	9630	

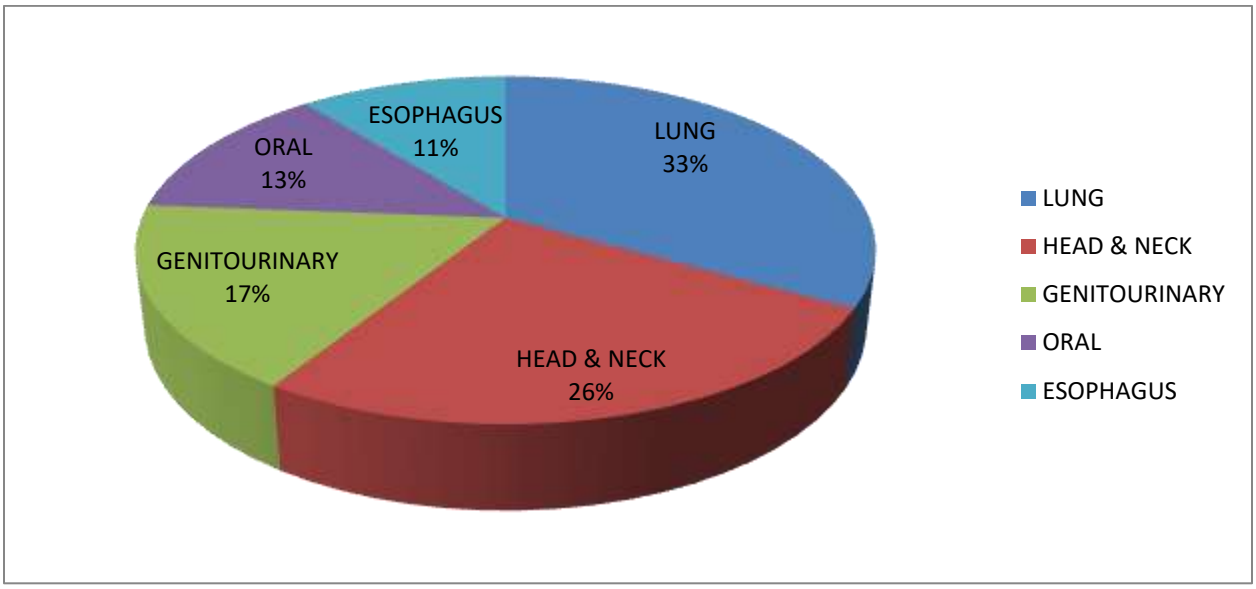
Table 3 shows Site Wise distribution of cancer where the highest prevalence was of lung cancers (14.22 %) followed by head and neck cancers (10.74 %) while the lowest prevalence was of Bone, soft tissue and other cancers.

GRAPH 4: TOP FIVE CANCERS



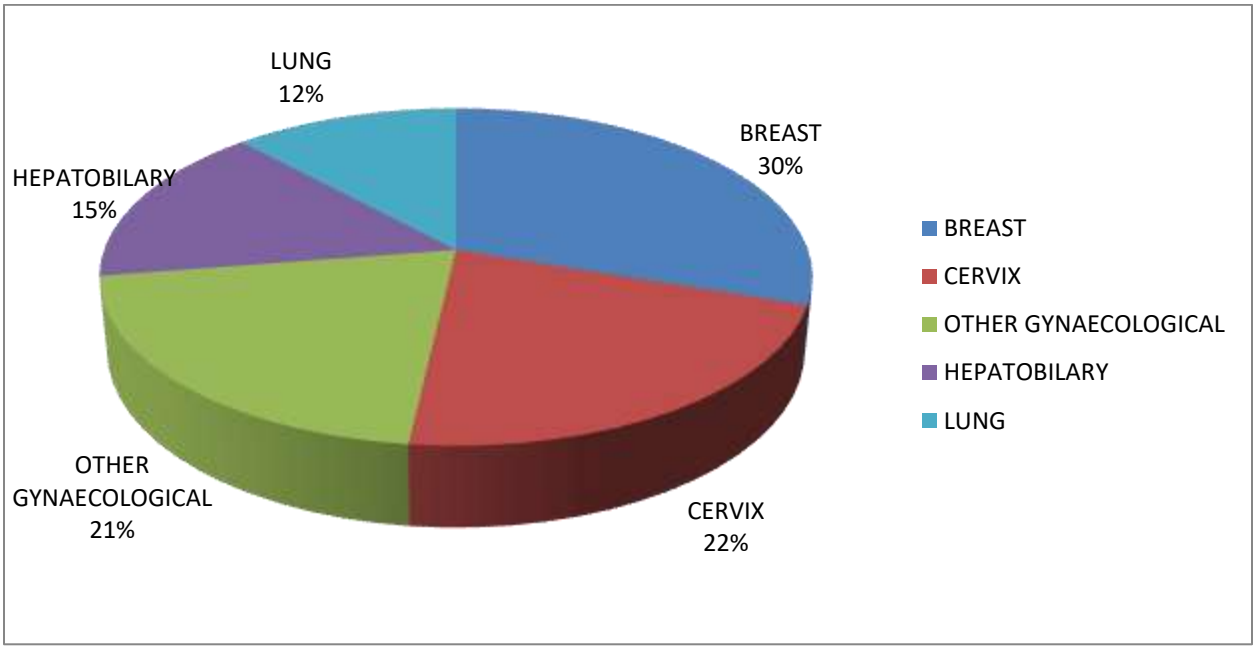
Graph 4 represents the top five cancers in Jammu district in the order of Lung cancer having the highest prevalence and Genitourinary cancers having lesser prevalence.

GRAPH 5: TOP FIVE CANCERS IN MALES

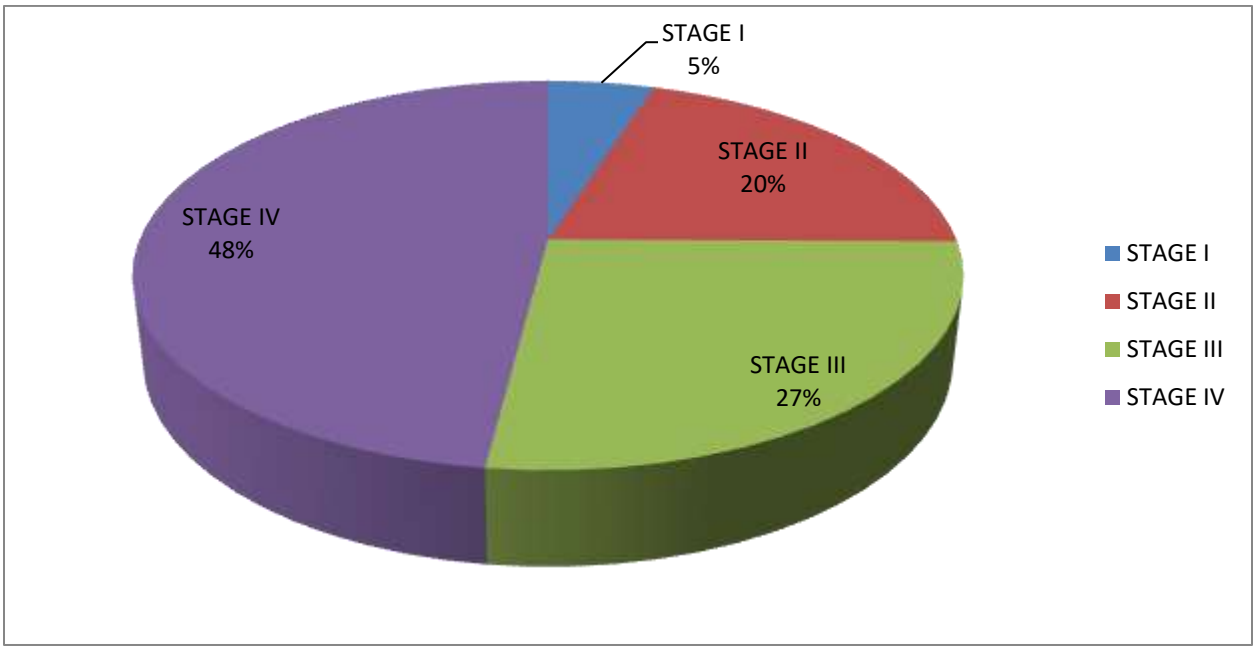


Graph 5 represents the top five cancers among the males in Jammu district in the order of Lung cancer having the highest prevalence and esophageal cancers having lesser prevalence.

GRAPHICAL REPRESENTATION OF TOP FIVE CANCERS IN FEMALES



Graph 6 represents the top five cancers among the females in Jammu district in the order of Breast cancer having the highest prevalence and Hepatobiliary cancers having lesser prevalence.



Graph 7 represents the Stages of cancer with 48% patients in Stage IV, 27% patients in Stage III, 20% patients in Stage II and 5% patients in Stage I.

DISCUSSION

One of the important issues in registry programs is the number of variables and data items that are defined (Zachary et al., 2015). The tendency is to choose the least, but necessary information in each registry (Zachary et al., 2015).[6] While the number of variables in the PBCRs are limited and hardly reach to 20 variables ((IARC)), the HBCRs dataset is a bit more extensive as it should cover clinical and administrative details, including patients data, administrative information, diagnosis and tumor information, treatment and care, and follow-up (Surgeons, 2016).[7] Therefore, number of variables increase to more than 50-100 variables (Surgeons, 2016). We reported that the number of minimal data set in the Abstract Plus software, which is used in the US for establishment of the National Cancer Database (NCDB) was more than 80 data items ((NPCR), 2016). The large number of variables in different aspect of diagnosis and treatment create several issues. First, the detail information for all of the variables is not usually available

in the patient charts. Second, the registrar should pass appropriate training to be able understand and abstract the information from medical records. Furthermore, the registration processes would be timely and would increase the workload and budget of the registry. Using electronic medical records have recently improved the efficiency of the registry program (Houser et al., 2012).[8]

To reach the HBCRs objective(s), it would be important to make sure about quality of data and results from the registry program. Therefore, quality control measures should be inevitable part and be integrated in the HBCR program (Kim et al., 2010). Consistency checks by the registry software or linkage of different data sources would improve the validity and completeness of the registry program. (Tagliabue et al.,2006). HBCRs with high data quality can be used for administrating and clinical aspects including: resource allocation, planning and policymaking in the area of cancer care and cancer control program (Jedy-Agba Elima E. et al., 2012).[9] Therefore, managers of the cancer hospitals should prioritize improvement of data quality through training of the registrars, developing appropriate registration manuals, control of the inconsistencies between different data, using appropriate software, and serious supervision of the registry processes. While quality control solutions are available for population-based cancer registries; there are no similar programs for HBCRs (Ruiz and Facio, 2004). We suggest further collaboration between HBCRs and sharing the experience, expertise, and protocols to enhance the quality of the HBCRs worldwide.[10]In the current analysis, 56.4% of the patients belonged to male gender which is in agreement with the results reported by Sadia Sultan (2017)[11] in a four-year institution based tumor registry of hematopoietic malignancies. In contrast, Aziz Z (2003)[12] and Aamer Ikram (2023)[13] reported female gender to be predominant (>50%) in their respective studies.

The results of the present study revealed that lung, head and neck and genitourinary cancers were among the top three in males while breast, cervix and other gynaecological were top three cancers among females. Aamer Ikram (2023)[13] reported oral, liver and colorectal among top three cancers in males while breast, ovary and oral were among top three cancers in females. In another study by Aziz Z (2003)[12], breast and ovarian were the most common cancers among females while leukemia, non-Hodgkin's lymphoma and lung cancer were frequent cancers among males.

CONCLUSION

In conclusion, the basic components of cancer control are prevention, early detection, diagnosis and treatment, and palliative care. Note that, diagnosis, treatment and care of cancer impose large cost to the community. HBCRs are important resource for planning and monitoring of cancer control program. In particular they play important role for the improvement of quality of care of cancer patients. We found that improving quality of care were the most important platform to abstract high quality information about cancer patients, tumors and diagnosis, stage and prognostic factors, treatment and follow-up. Although the minimum data set for HBCRs was

almost similar in different registries and covered all aspects of quality of care, the number of data items varied from country to country. Most registries applied either manual or electronic procedures for quality control of HBCR, including training of the registrars, developing appropriate registration manuals, consistency checks by software performing surveys and serious supervision of the registry processes.

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