

Cancer in Sheikhpura, Pakistan: 2017-2019

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Abstract

Cancer in Sheikhpura, Pakistan: 2017-2019

Objective

Sheikhpura is part of the Punjab Cancer Registry, with a population of over three million inhabitants. Herein, cancer distribution over three years, 2017-2019, is being reported.

Design

An observational, descriptive study.

Place and duration of study

Information on new cancers, diagnosed between 2017 and 2019, among the residents of the Sheikhpura district, Pakistan, was reviewed retrospectively.

Methodology

Data on incident cancer cases in Sheikhpura, from 20 collaborating centers of the Registry, were collected. Both the active and passive methods were used. Counts and percentages for adults and children/adolescents were computed.

Results

During 2017-2019, a total of 1,324 cases were reported, with the majority occurring in females (54.7%). Among adults, cancer of the breast (52.1%), reproductive system (11.1%), and hepatobiliary system (4.1%) were common in females (N=664), while hepatobiliary (12.7%), non-Hodgkin lymphoma (NHL (10.2%)), and prostate cancer (8.7%) were the leading diagnoses among males (N=480). In children and young adults (0-19 years (N=180)), acute lymphoblastic leukemia (ALL (35.5%)), Hodgkin lymphoma (13.8%), NHL (10%), and acute myeloid leukemia (AML (9.4%)) were the most common diagnoses.

Conclusion

Although the cancer distribution for Sheikhpura is similar to that reported for the contiguous district of Lahore, it is unlikely that all the cancer cases have been reported to the Registry. Further work is needed in cancer registration, with input from local stakeholders including pathologists, to ensure completeness of cancer surveillance in the region.

Keywords: Cancer, Punjab Cancer Registry, Sheikhpura.

Cancer in Sheikhupura, Pakistan: 2017-2019

Introduction

Sheikhupura is one of 36 districts of the province of the Punjab and is adjacent to the district of Lahore in the northeast of Pakistan, as shown in Figure 1 (1). Its boundaries run extensively along the boundaries of Gujranwala and Nankana Sahib, and a small limit of Narowal. According to the 2017 census, updated in 2018, Sheikhupura has a population of 3,460,426, with 2,258,636 representing the rural and 1,201,790, the urban population, making it a rural to an urban ratio of 1.87 to 1 (2). This shows that Sheikhupura is predominantly a rural expanse (65%). However, no further information is available about its population structure.

Figure 1. Map of the Punjab, Pakistan, showing the districts of the province.



As presented in the census report of 1998, Nankana Sahib was a sub-division of the district of Sheikhpura, but in 2005, the administrative boundary of Sheikhpura was redefined. Since then, Nankana Sahib is a separate district, and the statistics based on the 1998 census report can no longer be used for computing the population estimates for Sheikhpura. The current report from the census bureau also shows that Nankana Sahib has a population of 1,356,374, with over 80% living in the rural areas of the district (2).

As regards the health-care facilities in Sheikhpura, the district has one district headquarter hospital, which is the largest hospital of the district, and four tehsil headquarter hospitals (Safdar Abad, Muridkey, Sharaqpur, and Ferozewala) (3,4). Administratively, a tehsil is a sub-division of a district. The district does not have an oncology center but surgeries are performed in the main hospital and samples are sent to the laboratories for pathological review. In terms of facilitating the laboratory diagnosis of the patients visiting the health-care providers in the region, sample collection is done at the two Shaukat Khanum Memorial Cancer Hospital and Research Center (SKMCH&RC) laboratory collection centers in the district, and one each of Aga Khan University Hospital and Chughtai lab.

Sheikhpura is included in the Punjab Cancer Registry, which is a population-based cancer registry that was set-up in 2005, in Lahore (5). The purpose of this study is to provide an overview of the cancer cases reported over 3 years, in Sheikhpura.

Methodology

The Registry has over 20 collaborating centers in the region that report their cases on a prescribed data capture form, to the coordinating office located within SKMCH&RC. The basic data items that are required to be collected include the patient identifying data (name, sex, age, or date of birth) and the demographics (city or address) and, tumor-related particulars such as the incidence date, most valid basis of diagnosis, topography, morphology, behavior, and source of the particulars provided, when available (6–8). The data are entered into the electronic database of the Hospital.

To gauge the cancer epidemiology in Sheikhpura, a retrospective review of the records was conducted to retrieve the information on cases belonging to Sheikhpura, saved in the Registry database. A descriptive, observational

study was conducted and cancer count and proportion, by sex and age category, were determined. The age categories taken into consideration were 0-14 (children), 15-19 (adolescents), and ≥ 20 years (adults).

A check for duplicates was done using a combination of variables and for multiple primaries using the guidelines prepared by the International Agency for Research on Cancer (6).

Microsoft Excel V.2016 V.19 was used to analyze the data. The Institutional Review Board (IRB) of SKMCH&RC, registered with the OHRP as 'IRB00005898 - Shaukat Khanum Mem Cancer Hosp & Rsch Centre IRB #1 - SKMCH & RC', approved the study (Reference No. EX-28-01-21-01).

Results

During 2017-2019, 1,324 cases were reported from Sheikhpura. Females accounted for 54.7% of the cases (724/1,324). According to age category, there were 150/1,324 children (11.3%), 30/1,324 adolescents (2.3%), and 1,144/1,324 adults (86.4%). The mean age at presentation was 44.7 years \pm 19.7 (0-90 years), median 44.5 years, and mode 50 years (4.4%). Approximately 87% of the cancers were histologically confirmed while the rest were clinically diagnosed. Figure 2 and Figure 3 show the proportional distribution of cancer cases in adults and children/young adults, respectively. Cancers fewer than 15 in adults and miscellaneous cancers (15) in children/adolescents are not being displayed in the graphs. Moreover, unpublished data show that nearly 400 cases for Nankana Sahib were reported during the same period.

In Sheikhpura, among adult females (N=664), breast cancer accounted for 52% of the cases. Other frequently reported malignancies were those of the reproductive system (11.1%), hepatobiliary system (4.1%), lip/oral cavity/pharynx (3.9%), leukemia (3.3), and lower gastrointestinal tract (2.8%). In adult males (N=480), hepatobiliary cancers (12.7%) were the most commonly reported cancers followed by NHL (10.2%), prostate (8.7%), lower gastrointestinal tract (7.7%), bladder (7.7%), lip/oral cavity/pharynx (7.1%), leukemia (6.4%), skin (5.6%), and lung cancer (5.4%).

In children/adolescents (N=180), ALL (35.5%), Hodgkin lymphoma (13.8%), NHL (10%), and AML (9.4%) were the leading diagnoses. Fifteen miscellaneous cancers in the 0-19 years included 5 acute leukemia, NOS; 2 each of

adenocarcinoma of the colon, papillary carcinoma of the thyroid, and soft tissue sarcoma; and 1 each of adenoid cystic carcinoma of the sub-mandible, cervical, nasopharyngeal, and hepatocellular carcinoma.

Figure 2. Cancer distribution in adults (≥ 20 years), 2017-2019, Sheikhpura, Pakistan.

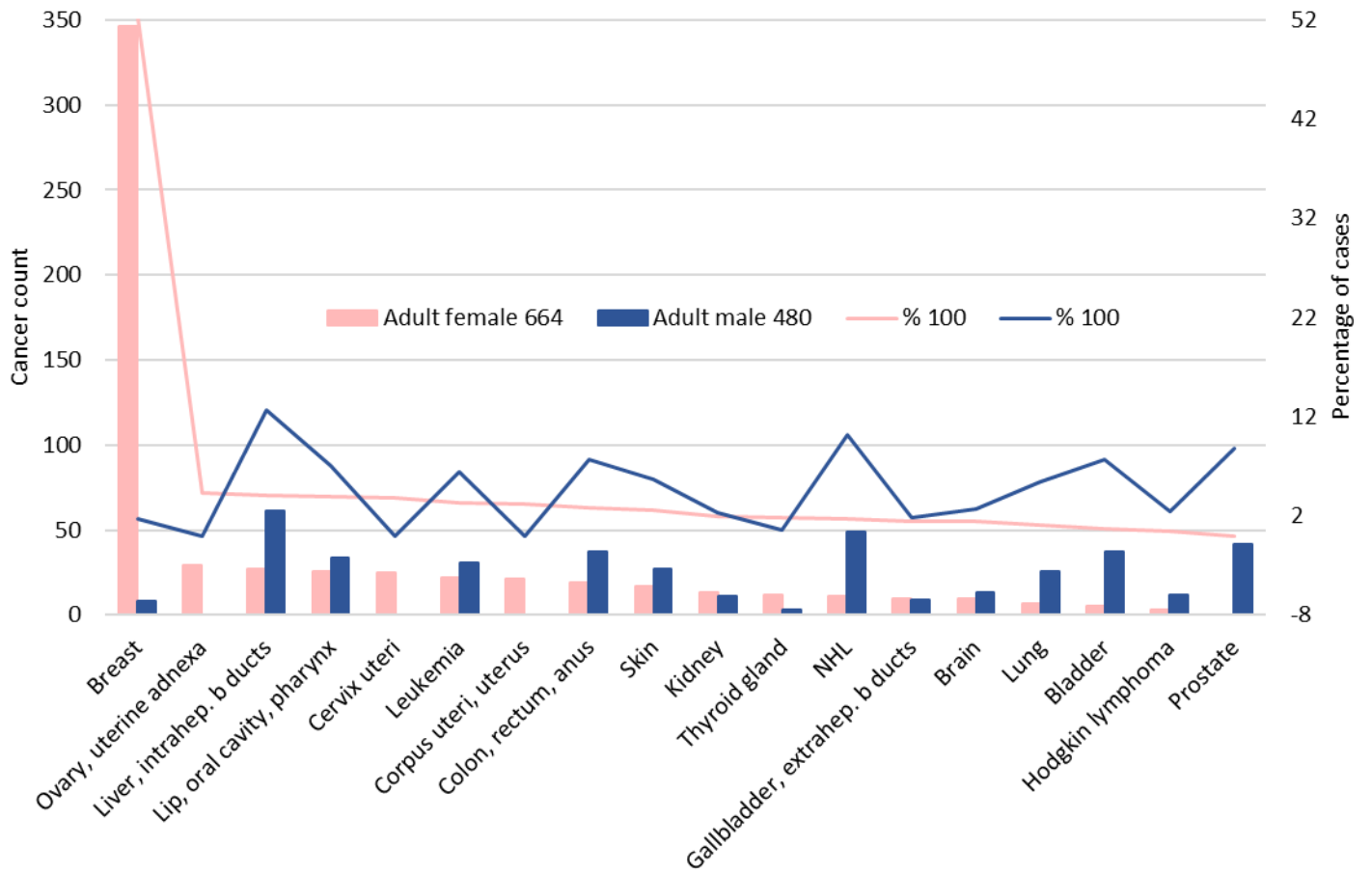
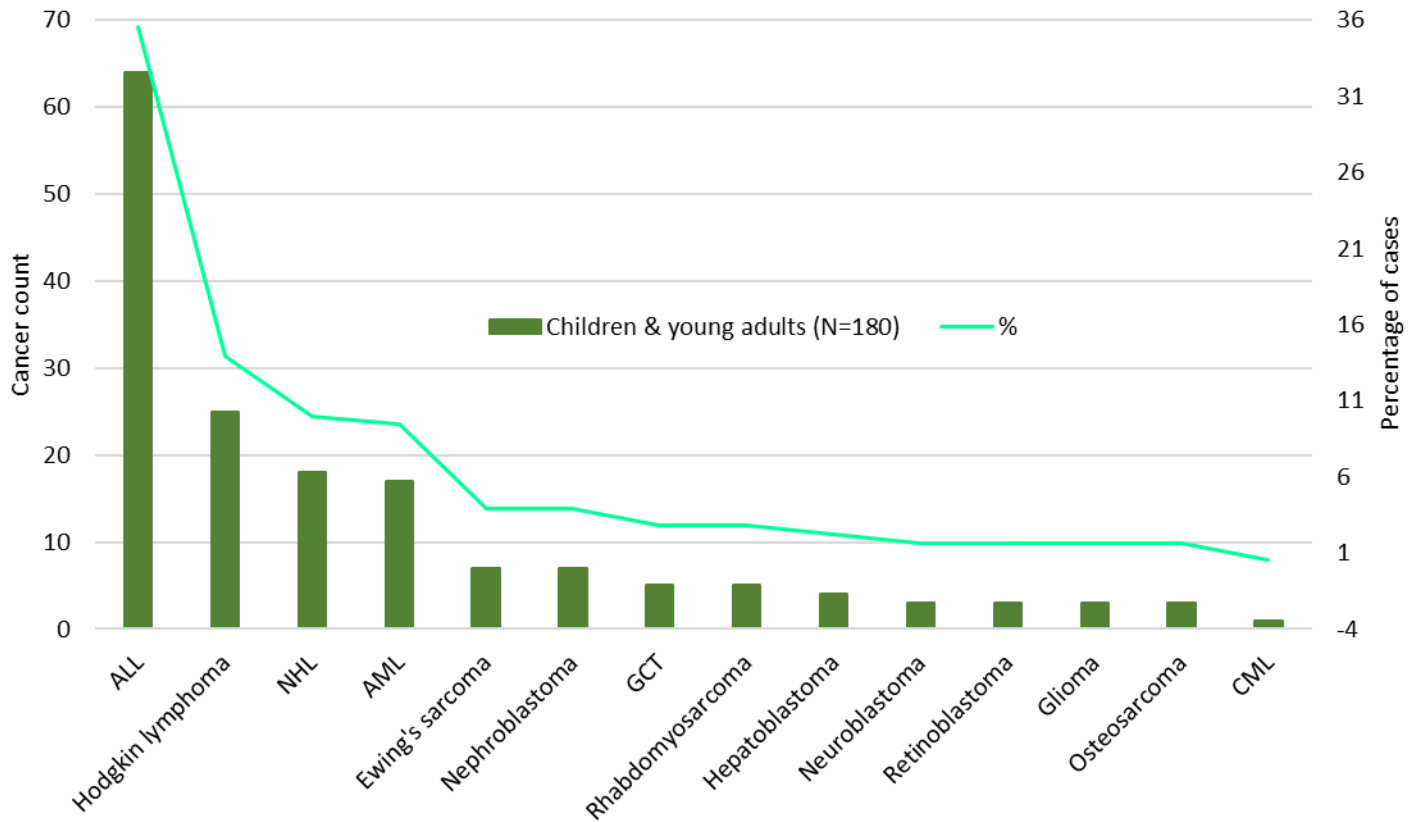


Figure 3. Cancer distribution in children and adolescents (0-19 years), 2017-2019, Sheikhpura, Pakistan.



Discussion

Over three-years, 1,324 cases were reported to the Registry from Sheikhpura. The proportional distribution of cancer cases shows that breast cancer was a commonly diagnosed malignancy (52.2%) among adult females, which is similar to what has been seen in Lahore.

Hepatobiliary cancers were commonly reported in both sexes. Therefore, conducting studies on the prevalence of the hepatitis C virus in Sheikhpura would be meaningful and for cervical cancer, on the human papillomavirus could be significant. Tobacco-related cancers were also frequently reported in our study, again highlighting the need for strict implementation of the tobacco control policy in the region.

In the 0-19 year age category, leukemia and Hodgkin lymphoma accounted for nearly two-thirds of the cases in Sheikhpura, wherein, rare cancers included carcinoma of the colon, thyroid, nasopharynx, and cervix.

A comparison with the unpublished data for Lahore for the same period has shown that in terms of ranking, the list of cancers commonly diagnosed was similar to what was seen in Sheikhpura. However, among males, tumors of the brain/spinal cord, prostate, and NHL took the lead in Lahore. Moreover, in children and adolescents, although the cancers frequently reported were similar to those for Sheikhpura, Glioma was the second frequently diagnosed cancer in Lahore.

A significant difference in the cancer counts between Sheikhpura and Lahore has been reported. Therefore, the comparison shown above is debatable. In Sheikhpura, nearly 65% of the inhabitants live in the rural part of the district. Contrary to it, Lahore is completely urbanized with a population of around 11 million and a high population density, where over 19,000 cases were diagnosed in 2017-2019. A marked difference in the total count could be explained partially by a disparity in the rural-urban divide in the region. Nevertheless, under-reporting appears to be the major contributing factor to this dissimilarity.

Conclusion

This preliminary study was meant to provide an overview of the extent of cancer registration in Sheikhpura, as part of the non-communicable disease surveillance in the Punjab. However, because enough information was not available for the population denominator, detailed statistics could not be computed.

Sheikhpura is a district adjacent to Lahore. Nonetheless, it seems as if many cases are still not being reported to the Registry. Stakeholders involved in patient diagnosis and management, especially pathologists, could help overcome this problem by setting up registries in Sheikhpura and other districts of the province, through the associations they represent in the region. This could help prepare the country to face a future wherein cancer surveillance is an

integral part of the public health system, providing an accurate, quantitative portrayal of cancer and its determinants in a defined population.

Disclosure

The Registry is registered under the Societies Registration Act of Pakistan and is a member of the International Association of Cancer Registries, France. The Shaukat Khanum Memorial Trust is sponsoring the Registry.

Ethical approval

The Institutional Review Board of SKMCH&RC approved this study.

Patient consent

Patient consent was not obtained for this study as it was a retrospective review of the records, results were collated, and anonymized data presented in the manuscript.

Conflict of interest

The authors declared no conflict of interest.

Authors' contributions

FB conceived the idea of the study, designed it, conducted the statistical analysis, created figures, interpreted the results, did a literature search, drafted the manuscript, and finalized it. SM did the case finding, indexing, and coding of cases, and generated summaries. AA, RA, MAK, AN, and TM contributed to the acquisition of data and are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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