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Pattern of Cancer in Majmaah area, Saudi Arabia: A 5 - year review (2011-2016)

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Abstract

Background: The burden of cancer is growing globally as one of the top leading causes of death. Information on cancer patterns and burden are essential for effective planning of cancer control interventions. This study is one of a few studies addressing the issue of cancer pattern in this area of the world.

Methods: This is cross sectional study of diagnosed pathology biopsies, recorded at King Khalid Majmaah Hospital, Al Majmaah, Saudi Arabia from December, 2011 to December 2016.

Results: The study shows slight higher incidence of cancers among male 61 (50.4%), with Male to Female ratio of 1.02:1. There was 74.4% of cancer cases were reported among Saudis and 25.6% of non-Saudis. Majority of cancer cases were found among youth and adult, only 3.3% of cancer occurred in children. The estimated incidence of cancer by site encountered that the most common form of cancer is affecting the gastrointestinal tract 50 (41.3%), followed by Breast cancer 22 (18.2%).The most common form of cancers among males is Gastrointestinal tract cancer (55.7%) and among female is breast cancer (35%).

Conclusions: The overall pattern of cancers incidence and distribution in Al Majmaah area is more or less comparable but not typical with other studies conducted in KSA. This study will facilitate effectively in planning of cancer control interventions in this area in collaboration with the national effort.

Keywords: Cancer, pathology biopsies, Gastrointestinal tract cancer.

Background and Introduction

Cancer is one of a major serious health problems in both developing and developed countries. The disease incidence is remarkably increased globally and considered as the second leading cause of death in the USA.[1]According to the World Health Organization (WHO), the numbers of new cancer cases is expected to rise by about 70% over the next 20 years .[2]It brings about tremendous psychological suffering, social distress and hardships to the patients and their relatives.

Ten-Year Cancer Incidence report among Nationals of the Gulf Cooperation Countries (GCC) from1998- to 2007 reveals 95,183 newly diagnosed cancer cases among GCC States' nationals reported by the six National Cancer Registries (UAE, Bahrain, KSA, Oman, Qatar, and Kuwait).[3]The KSA estimated new cancer cases in the year 2014 was 15185 reported from different health facilities, out of which, 76.8% were Saudis and 23.2% were non-Saudis. The age-standardized rate (ASR) for cancer pattern in KSA revealed remarkable increase in the incidence rate for both sexes. The ASR for cancer reported in 2014 for male was 70.4 cases per 100,000 population compared to 81.4 per 100,000 population for females.[4]

This study is focused on cancer pattern in Majmaah area, which is actively contribute in drawing health map and population based data on cancer as part of University responsibilities towards the local community and it also help in the formulation of research protocols to identify risk factors in the future. Further more, we believe that this study will facilitate the public awareness of cancer, and will help in the development of cancer prevention, early detection and control programs.

The objectives of this study were to estimate the burden of cancer in Majmaah area, Saudi Arabia and to determine the epidemiological pattern of certain malignant neoplasms. The results of this study may facilitates planning for cancer control interventions in the area.

Methodology

Setting: Majmaah is the capital of Majmaah Governorate in Riyadh region, Saudi Arabia. The total population of the governorate is around 97,349. The study was carried out at King Khalid Hospital in Majmaah, which is a referral hospital to all district hospitals in the governorate. King Khalid Hospital provides clinical health care through different departments.

Cancer cases were diagnosed in this hospital represent cases in the entire region except brain tumors, which were referred to tertiary centers. Our practice in histopathology department based on the clinical and morphological appearance of the lesions with application of routine available staining methods e.g hematoxylin-eosin (H&E) stain. A few cases need to be referred to the regional lab for further verification and application of specialized methods (like immunohistochemistry staining).

Study design & population: This is a descriptive retrospective study design modulated by record analysis of diagnosed pathology biopsies, performed at King Khalid Majmaah Hospital, Majmaah, Saudi Arabia. The specimens of all patients with positive histologically diagnosis as having malignancies, from December, 2011 to December 2016 were included in this study.

Data collection and handling: The data was collected by a pre-tested checklist from surgical pathology department registration record. The check list includes demographic data of the patients and the histopathological findings. Malignancies were categorized according to the system and organ affected. Sex and nationalities of these patients were also analyzed. All data were edited and cleaned to rule out any element of discrepancies. SPSS version 20 was utilized to analyze. Descriptive analysis was done.

Results

A total of newly diagnosed surgical cases registered in department of pathology, King Khaled Majmaah Hospital between December 2011 to December 2016 was 15,709. Out of these cases only 121 (0.8%) were diagnosed as cancer.

Table (1) Sociodemographic characteristic of cancer patients in Majmaah (n=121)

Variables	No.	%
Gender:		
Male	61	50.4
Female	60	49.6
Age/ years:		
0 – 14	4	3.3
15-44	41	33.9
45 – 59	40	33.1
60 – 74	15	12.4
> 74	21	17.4
Nationality:		
Saudis	90	74.4
Non-Saudis	31	25.6
Area of residence:		
Majmaah	54	44.6
Zulfi	38	31.4
Shaqra	19	15.7
Hota Sudair	8	6.6
Al Ghat	2	1.7

Among all reported cancer cases 44.6 % of cases were basically from Al Majmaah city, 31.4% were referred from Zulfi city, 15.7% of cases registered from Shagra area, 6.6 % reported form Hota Sudair and 1.7 % referred from Al Ghat hospital (**Table 1**).

Of 121 reported cancer cases, 61 (50.4%) were males, with M:F ratio of 1.02:1 (**Table 1**). 74.4% of cancer cases occur in patients of Saudi origin and 25.6% of cases occurs in other nationalities.

The age distribution revealed that the majority of cancer cases were of youth and adults ranging between age of 15 to 59 years. 81 (67%) and only 4 (3.3%) cancer occurred in children (**Table 1).**

Table (2) Estimated cancer cases (incidence) by site in Majmaah area, 2011-2016

System/organ	Frequency	Percent
Gastrointestinal tract	50	41.3
Breast	22	18.2
Lymph node	12	9.9
Skin	11	9.1
Female genital tract	7	5.8
Soft tissue	6	5.0
Oral	3	2.8
Bone& Cartilage	2	1.7
Miscellaneous	8	6.6
Total	121	

The estimated cancer incidence by site encountered that the most common form of cancer is affecting the gastrointestinal tract 50 (41.3%), followed by breast cancer 22 (18.2%), lymphoid malignancies 12 (9.9%) and skin 11 (9.1%). (**Table 2**).

Table (3) Distribution of type of malignancies

Type	Frequency	Percent
Carcinoma	81	66.9%
Lymphoma	19	15.7%
Sarcoma	8	6.6%
Unclassified	8	6.6%
Neuroendocrine	3	2.5%
Germ cell tumor	2	1.7%
Total	61	100%

Table (3) shows the most common malignancy in both male and female reported from different sites of the body. The most common type is carcinoma, 81 (66.9%), followed by lymphoma 19 (15.7%)

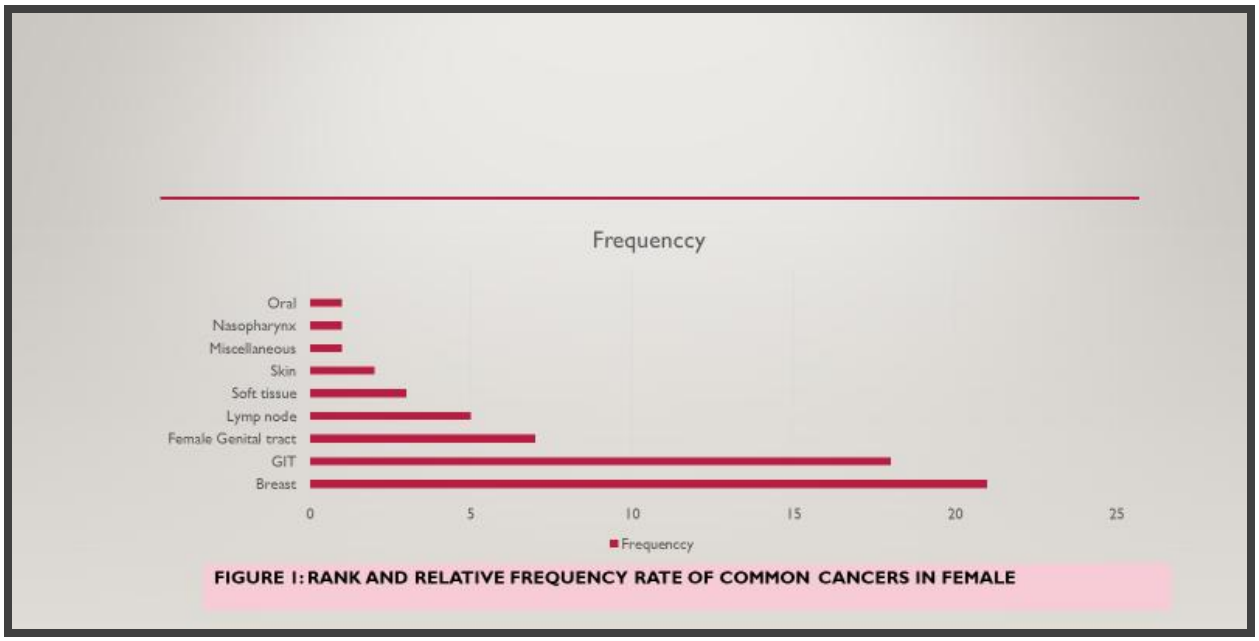

Fig (1) Frequency rate of common cancers in female by site
[Female: Breast, GIT and Genital tract in order]

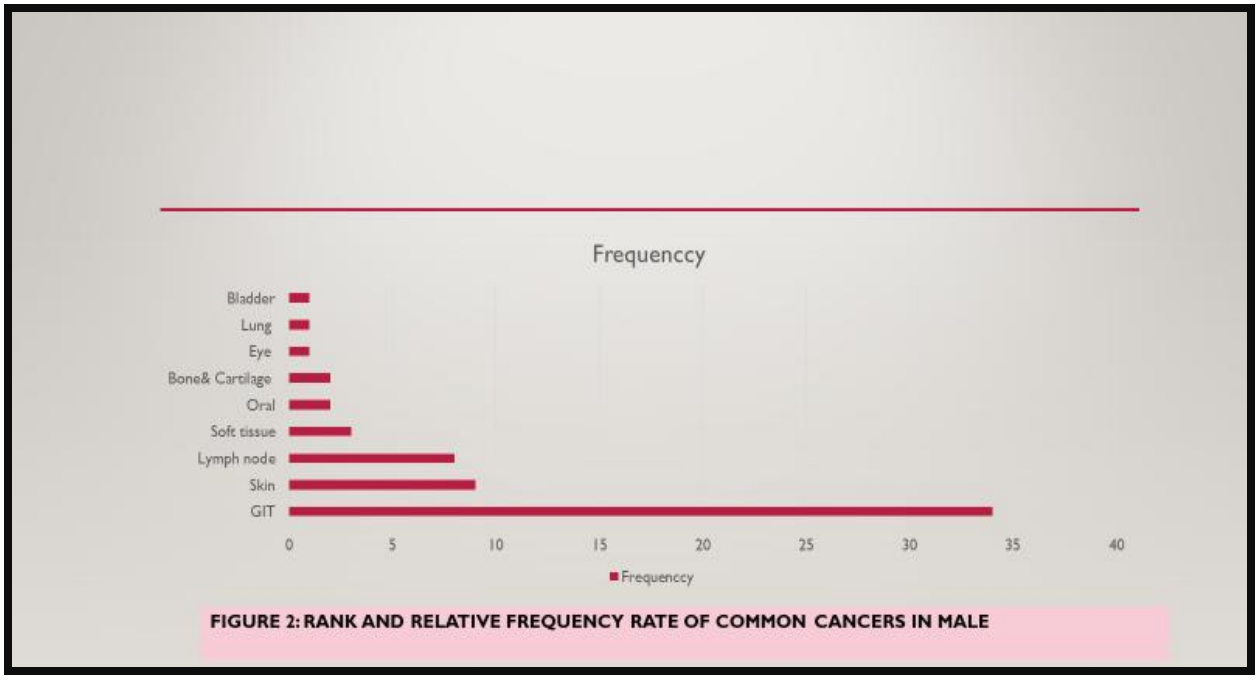

Fig (2) Frequency rate of common cancers in female by site
[Male: GIT, Skin and lymph node in order]

Figures 1 and 2 show the distributions of cancer cases by gender. Males showed higher incidence of cancer compared to females. The most common form of cancer among males is GIT cancer 34 (55.7%), followed by skin and lymphoid malignancies.

The most common form of cancers among female is breast cancer 21 (35%) followed by GIT cancer 18 (30%) and female genital tract cancers 7 (11.7%) in a decreasing sequence.

Discussion

This study is considered as the first scientific report on the pattern of cancers in Al Majmaah area. However, this is a single departmental-based study, handled a limited numbers of cancer cases, but it will strongly participated in identifying the magnitude of this health problem and attracting the attention of all concerned bodies in this area including the leadership, policy makers, health providers, researchers, public& community organizations and students. Also, the study gives suitable opportunity to compare the cancer incidence in this area with the national and international pattern.

In our study, a total of 15,709 cases registered in department of pathology in the respected period from 2011 to 2016, out of which 121 cases are confirmed to be malignant. The overall most commonly involved organs by malignancies are gastrointestinal tract 50 (41.3%), followed by breast 22 (18.2%), lymph node 12 (9.9%) and skin 11(9.1%) Table 2. This high incidence of GIT malignancy in both sex is comparable with the data published for male by Saudi Cancer registry (2014) 4, Imad A. El Hag et. al (2002)5 and Hussain MA1 et. al (2012)[7].

The most common cancers recorded in male in our study are the cancers of the GIT, skin and lymph node malignancies, which is not similar to distribution noted by the National cancer registry-KSA. The common cancers in men published by the National cancer registry KSA in descending order were cancers of GIT, lymphoma, leukemia, lung and prostate. Regarding the cancer distribution among female, the breast cancer was found to be the most common cancer accounted for (35%), followed by GIT cancer, Female genital tract cancers, lymph node malignancies and others. These results are comparable and shows some similarities to which reported in KSA.[4,11]

According to WHO cancer report 2014, common cancers in male were cancers of the lung, stomach, prostate and colorectal and among the female cancers of the breast, cervix, colorectal and lung.[13]

The estimated cancers rank by diagnosis, demonstrates that the three-leading cancers are: carcinoma, lymphoma and sarcoma respectively, which is not similar but slightly correlated to the published data by National cancer registry-KSA (2014) and the GCC states reports (2011). The National cancer registry report- KSA (2014) displays cancers rank for male [Colorectal, lungand Lymphoma] and for female [Breast, Colorectal and thyroid cancers] in descending sequence.[3,4]

Surprisingly low incidence rate and zero record are noticed for lung, eye, bladder, prostatic and thyroid cancers, which is overall not similar to status reflected in the data published in the national, GCC states and international levels.[1,3,13]This could be well explained by the availability of needed logistics and the referral protocol followed in this aspect. Also other factor can contribute to this issue, the "manual" paper-based record for cancer cases, which adopted in our surgical department influenced the data retrieval process and interfered generally with the quality of the filing system. JURGEN STAUSBERG et al support that the Electronic patients record (EPR) documentation showed potential advantages in both quality and quantity of procedure coding.[12]

The cancers incidence and distribution pattern in children accounted for 4 (3.3%), which is remarkably lower than national, GCC states and international incidence of cancers published in this age group. 3 Al-Mutlaq HM et al (1999 – 2008) study on childhood cancers in Saudi Arabia over a period of ten years, revealed 8% out of a total cancer cases, which is not matching with our findings.[10]

Finally, patterns of cancer in Al Majmaah area evident by this study is not typical but comparable with data published by the National and worldwide cancer pattern reported by WHO.

Conclusion

The overall pattern of cancers distribution in Al Majmaah area is more or less comparable but not typical with cancers distribution published by National cancer registry-KSA, GCC states and world cancer records-WHO. There is significant variation noticed in the distribution of cancers by site as some example of cancer e.g. [lung, thyroid and prostate cancers], shows zero record and the lowest incidence published to date. Carcinoma of GIT as well as breast, lymphomas and sarcoma, are the leading cancers in the area. This study opened window and will facilitate effectively in planning of cancer control interventions in this area in collaboration of national effort.

References

1. Robbins, S., Cotran, R., Kumar, V., Abbas, A. and Aster, J. (2015). Pathologic basis of disease. 9th ed. Philadelphia, PA: Saunders Elsevier.
2. G. Reboux. "Cancer." World Health Organization, World Health Organization, 2018 [1 Feb. 2018], .sheets/detail/cancer-room/fact-9:00 pm, www.who.int/en/news
3. The International Agency for Research on Cancer (IARC). "GLOBOCAN 2012: Estimated cancer incidence, Mortality and Prevalence Worldwide in 2012". 2012 [8 May 2018], 10:00 pm. www.globocan.iarc.fr/Pages/fact_sheets_cancer .
4. Gulf Center for Cancer Control and Prevention. Ten-Year Cancer Incidence among nationals of the GCC state (1998-2007). Riyadh, KSA: Gulf Center for Cancer Control and Prevention, King 8.4-Faisal Specialist Hospital and Research Center; 2011 p. 6
5. Saudi Cancer Registry, Saudi Health Council, Kingdom of Saudi Arabia. Cancer Incidence Report Saudi Arabia 2013. Riyadh: Saudi Health Council; 2018 p. 16-53.
6. A.El Hag I, Katchabeswaran R, C. Chiedozi L, M. Kollur S. Pattern and incidence of cancer in Northern Saudi Arabia. Saudi Med J. 2012; 23(10):1210-1213.

7. Hussain M, Pati S, Swain S, Prusty M, Kadam S, Nayak S. Pattern and Trends of Cancer in Odisha, India: A Retrospective Study. Asian Pacific Journal of Cancer Prevention [Internet]. 2012 [cited 4 February 2018];13(12):6333-6336. Available from: https://www.ncbi.nlm.nih.gov/pubmed/23464454
8. Jemal, A., Bray, F. and Ferlay, J. (1999) 'Global Cancer Statistics: 2011', CA Cancer J Clin, 49(2), p. 1,33-64. doi: 10.3322/caac.20107.Available.
9. W Stewart B, P Wild C. World cancer report 2014 [Internet]. 1st ed. Lyon, France: The International Agency for Research on Cancer,; 2018 [cited 9 January 2018]. Available from: http://site.ebrary.com/id/11014806.
10. Stausberg J, Koch D, Ingenerf J, Betzler M. Comparing Paper-based with Electronic Patient Records: Lessons Learned during a Study on Diagnosis and Procedure Codes. Journal of the American Medical Informatics Association. 2003;10(5):470-477.
11. Al-Mutlaq H, Bawazir A, Jradi H, Al-Dhalaan Z, Al-Shehri A. Patterns of Childhood Cancer Incidence in Saudi Arabia (1999-2008). Asian Pacific Journal of Cancer Prevention [Internet]. 2015 [cited 6 March 2018]; 16(2):431-435. Available from: https://www.ncbi.nlm.nih.gov/pubmed/25684467.

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