

## ORIGINAL ARTICLE

### Prevalence of various cancers in a tertiary hospital of North India

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#### ABSTRACT:

**Background:** Incidences of cancer vary with age, gender, topography and ethnicity, hence it is essential to have knowledge regarding pattern of cancer prevalence at different areas. **Objective:** To study the prevalence of various cancer at a tertiary care hospital of North India. **Materials and methods:** In this study, data of cancer patients (both new cases and old cases) were retrospectively collected. In total 700 data was generated which was then evaluated to frame their prevalence pattern. **Result:** In this study we commonest cancer observed was breast cancer (28.2 %). Gender wise comparison showed that cancer of head and neck (14.5 %) and stomach (17.1%) was highly prevalent in males while in females highly prevalent ones were breast cancer (28.2 %) and cervix cancer (9.7 %). **Conclusion:** Knowledge of cancer pattern in different areas is useful to implement appropriate and adequate facilities for proper patient care so that disease burden to society can be reduced.

**Keywords:** Cancer, geography, ethnicity, site

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#### INTRODUCTION:

Cancer is one of the major health problems globally. As per the record 2012, there were around 14 million newly diagnosed cases of cancer and 8 million deaths associated with cancer. Thus chronic disorder has not spared any populations, regions or countries. The incidences of cancer may vary depending upon topography or morphology and molecular make up of organisms [1]. In India, according to the data of 2016, there were 14.5 lakhs new cases while the reported deaths from cancer were 7.36 lakhs. The incidence of cancer in India will surge to 17.3 Lakhs from 14.5 by the end of 2020, despite of advancement in treatment of cancer [2]. The prevalence of cancer is also affected by genetic, environment as well as life style factors.

Though well facilitated and hi-tech medical facilities are available for cancer treatment, the world is slowly getting over burdened with surge in number of various types of cancers. Hence in this study we aimed to find out the prevalence pattern of cancer in a tertiary medical hospital situated in North India

The literature on the epidemiology of cancers in India is sparse. Mallath et al [3]. in their series of articles on cancer scenario in India have partly addressed this issue, yet a detailed systematic review of geographical distribution, quality of the studies published and issues addressed is lacking. Studies that bring out the

incidence trends and patterns of cancers and epidemiology are crucial, as they will guide in planning infrastructure, improving treatment facilities, assist in strengthening diagnostic procedures and implementing necessary screening programs for a wide variety of cancers in future [4]. As India prepares for a massive screening of Non Communicable Diseases (NCD), including cancer in the 'Ayushman Bharat' (PM-JAY) scheme, it is imperative that we know the current trends and burden of cancers (denominator) in India, to plan feasible cancer care in India. This article aims at evaluating the larger picture of cancer epidemiology literature in India. We reviewed the literature published so far in the field of cancer epidemiology, highlighted the lacunae in it and provided possible pointers for future direction.

#### MATERIALS AND METHODS

This study was a retrospective study conducted at Department of Surgical oncology, from January 2016 March 2017 in the tertiary care hospital named National Institute of Medical Science & Research, Jaipur Rajasthan. 700 cases of cancer were enrolled. These cases whether either newly diagnosed cases or the cases undergoing various treatment for cancer during this study period. The data obtained were recorded and analyzed.

**RESULTS**

We found that the prevalence of cancer was high in later ages as shown in table 1. Female showed higher prevalence than male (table 2). The commonest form of cancer observed was in female breast cancer (28.2%),

followed by cervical cancer (9.7%), endometrial (7.9%) and stomach cancer (7.4%). In males, the commonest was stomach cancer (17.1%) followed by head and neck cancer (14.5%), colorectal cancer (9.7%) and hematological cancer (8.4%) (table 3).

**Table 1**

Age	No.	Percentage
<10	5	0.7
10-20	16	2.3
20-30	42	6.0
30-40	34	4.9
40-50	144	20.6
50-60	176	25.1
60-70	192	27.4
70-80	74	10.6
>80	17	2.4
Total	700	100

**Table 2**

Gender	No.	Percentage
Male	310	44.3
Female	390	55.7
Total	700	100
Male: Female	0.79	

**Table 3**

Cancer type	Total no	Male		Female	
		No.	Percentage	No.	Percentage
Bladder	23	22	7.1	1	0.3
Breast	111	1	0.3	110	28.2
Cervix	38			38	9.7
Colorectal	46	30	9.7	16	4.1
Endometrial	31			31	7.9
Hematological	42	26	8.4	16	4.1
Head and Neck	68	45	14.5	23	5.9
Kidney	10	7	2.3	3	0.8
Lung	32	22	7.1	10	2.6
MUO	25	11	3.5	14	3.6
Miscellaneous	31	19	6.1	12	3.1
Oesophagus	32	16	5.2	16	4.1
Ovary	22			22	5.6
Penis	13	13	4.2		
Prostate	10	10	3.2		
Skin	25	13	4.2	12	3.1
Stomach	83	53	17.1	30	7.7
Sarcoma	18	11	3.5	7	1.8
Thyroid	40	11	3.5	29	7.4
	700	310	100	390	100

## DISCUSSION

Evaluation of cancer pattern is a simple measure to find out the burden of cancer. The prevalence of cancer is different in different geographic locations. For example, in the regions where economic development is good along with better screening practices the incidences of breast cancer and prostate cancers are high. Similarly, cancers of bladder, larynx and lungs are more prevalent in tobacco linked regions. Further cancers of stomach, liver and cervix which are due to infections agents are more frequently observed in under developed areas. The risk of cancer development also includes age, gender, ethnicity and socioeconomic status. It may be also affected by lack of awareness, less availability and affordability of facilities and to some extent societal customs.

In India majority of cancers are related to life style and infections. In 2012 international agency for research in cancer suggested 5 most common sites for cancer development namely (in order wise with high incidences) lung, prostate, colorectal, stomach and liver in males while in females it was in order of breast colorectal, lungs, cervix and stomach [5].

A study conducted in Pakistan showed that females of age group 40-60 were mostly affected while in males the age mostly affected was 50-60 which was similar to our study [6]. Cherian T *et al* reported 52% of females and 48% of males to have cancer [7] while Agrawal R *et al* reported to same to be 60% and 39% respectively. Majority of patient were in the age group of 35-64 years [8].

In another retrospective study of Hussain MA *et al* the male to female ratio for cancer development was 1.1 while in our study, it was 0.79. In their study male have higher incidence of oral cancer, gastrointestinal cancer and acute lymphocytic leukemia while in females breast cancer, cervix cancer and ovarian cancer were highly prevented which was in line to our study [9].

Since cancer incidences show increasing trend in human populations, understanding pattern of cancer development aids in developing cancer control guidelines with improved clinical outcomes. However, the pattern of various cancers in rural and urban sectors of India is largely unnoticed. Hence, our study may provide some concepts of cancer prevalence that can help the designated healthcare professionals to implement researches and practically apply these researches to have control over health burden of cancer. The most common risk factor studied is tobacco in the form of smoking and the smokeless, which is most commonly seen in the Indian subcontinent [10]. The cancers studied with tobacco as a risk factor were gastrointestinal cancers, head and neck cancers, lung cancers, prostate cancer and urinary tract cancers. The use of tobacco in its various forms is estimated to be a risk factor in 45% male cancers and 17% female

cancers in India [11,12]. This keeping in line with the most prevalent cancers among males. India needs to have more studies addressing risk factors as the etiology may vary considerably between the geographic location, diet, addiction and different cultural practices. A good example of cultural practices affecting risk factor influence is the association of human papilloma virus in oral cancer. This is a major risk factor for oral cancers in the world, but it may not hold true in the Indian scenario and Indian study has shown no similar association of human papillomavirus with oral/hypopharyngeal cancers [13]. Cancer cervix is the second most common cancer-affecting females in India. However, only two studies highlight the risk factors for this cancer in India [14]. The proportion of prevalence to publications was largely maintained in all cancers while studying the incidences. We found that the studies addressing risk factors are not proportionately large in numbers compared to prevalence. Studies on Tobacco related cancers are highest in numbers, proportionate to their prevalence but cervix and breast cancers yet need to be explored for their risk factors as the number of studies for modifiable risk factors for these two cancers are low. The design of the risk factor studies reviewed lacks any randomized control trials (RCT) and large prospective cohorts. This may be due to the complexity of conducting RCT and high costs. Most of the studies addressing risk factors have incorporated cross-sectional or case-control study designs for their studies.

## CONCLUSION

The incidence of cancer is different based on geographic and topographic variation that may also impact treatment modalities. Not only health care fraternity but also the general public should possess sound knowledge on management and control of cancers. Therefore further larger epidemiological studies are suggested.

## REFERENCES

1. Stewart BW, Christopher P. World Cancer Report 2014 .Edited by. WILD published by International Agency for Research on Cancer, 2014
2. Singh N. HPV and Cervical cancer - prospects for prevention through vaccination. Indian J Med Paediatr Oncol, 2005; 26(1):20-3.
3. Mallath MK, Taylor DG, Badwe RA et al. The growing burden of cancer in India: epidemiology and social context. Lancet Oncol 2014;15:e205-12
4. D'Souza ND, Murthy NS, Aras RY. Projection of cancer incident cases for India -till 2026. Asian Pac J Cancer Prev 2013;14:4379-86
5. Mallath MK, Taylor DG, Badwe RA, Rath GK, Shanta V, Pramesh CS *et al.*, The growing burden of cancer in India: epidemiology and social context. Lancet Oncol, 2014.

6. Zeb A, Rasool A, Nasreen S. Cancer Incidence in the Districts of Dir (North West Frontier Province), Pakistan: A Preliminary Study. *J Chin Med Assoc*, 2008;71(2):62-5.
7. Cherian T, Mahadevan P, Chandramathi S, Govindan J, Mathew IL. Increasing cancer incidence in a tertiary care hospital in a developing country, India. *Indian journal of Cancer*, 2015;52(1):133-138.
8. Aggarwal R, Manuja, Aditya K, Singh GPI. Pattern of Cancer in a Tertiary Care Hospital in Malwa Region of Punjab, in Comparison to Other Regions in India. *Journal of Clinical and Diagnostic Research*, 2015;9(3):XC05-XC07.
9. Hussain MA, Pati S, Swain S, Prusty M, Kadam S, Nayak S. Pattern and trends of cancer in odisha, India: a retrospective study. *Asian Pac J Cancer Prev*, 2012;13(12):6333-6.
10. Ramadas K, Sauvaget C, Thomas G et al. Effect of tobacco chewing, tobacco smoking and alcohol on all-cause and cancer mortality: a cohort study from Trivandrum, India. *Cancer Epidemiol* 2010;34:405–12
11. ICMR NCRP. Consolidated report of hospital based cancer registries [Internet]. 2012;
12. Sinha DN, Abdulkader RS, Gupta PC. Smokeless tobacco-associated cancers: a systematic review and meta-analysis of Indian studies. *Int J Cancer* 2016; Mar 15; 138(6): 1368–79 doi: 10.1002/ijc.29884
13. Laprise C, Madathil SA, Allison P et al. No role for human papillomavirus infection in oral cancers in a region in southern India. *Int J Cancer* 2016;138:912–7
14. Kai LJ, Raju K, Malligere Lingaiah HK, Mariyappa N. Significance of blood group and social factors in carcinoma cervix in a semi-urban population in India. *Asian Pac J Cancer Prev* 2013;14:4811–4