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Original Research Article

Epidemiological Trend of Cancer among Patients at Regional Cancer Center, Dr. B. R. Ambedkar Memorial Hospital, Raipur: A Tertiary Care Hospital of Central India

Dr. Ashish Kumar Sinha[1], Dr. Rajeev Ratan Jain[2], Dr. Somen Kumar Pradhan[3]

[1]Assistant Professor, [3]Post-Graduate Resident,
Department Of Community Medicine. Pt. J.N.M. Medical College, Raipur, Chhattisgarh.
[2]Assistant Professor, Department of Radiotherapy, Regional Cancer Centre, Dr. B. R. Ambedkar Memorial Hospital, Raipur, Chhattisgarh.

Corresponding Author: Dr. Ashish Kumar Sinha

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ABSTRACT

Background- In present scenario, there is a lack of well established population based cancer registry in the state of Chhattisgarh. Therefore hospital records can play a major role in filling the gap. Cancer data from Chhattisgarh are very much limited. Hence, this study was planned based on hospital records of cancer patients registered at Regional cancer centre, Dr. B. R. Ambedkar Memorial Hospital, Raipur, Chhattisgarh.
Materials and Methods- It is a record based retrospective study conducted at Regional cancer centre, Dr. B. R. Ambedkar Memorial Hospital, Raipur. Patient records were obtained from Medical Record department and relevant information was extracted from them for the present study.
Results- A total of 16,395 patients were registered at the RCC during the 5 year period i.e. 2011 to 2015, were included in this study. The male: female ratio was found to be 1:1.33 approximately. Majority of the male and female patients were from 45-59 years age group. Most commonly reported cancer among male and female patients were oral cancer and cervical cancer respectively.
Conclusion- Oral cancer were more common among males where as gynaecological cancers like cervical and breast cancer were more prevalent among females, more over ovarian cancer came into notice with increasing trend. Females are victims of cancer at an early age in comparison to male counterparts.

Key Words- Cancer, Regional Cancer Centre (RCC), Chhattisgarh, Behaviour Change Communication (BCC)

INTRODUCTION

Cancer is one of the most common causes of morbidity and mortality today. In the year 2012, cancer accounted for 14.1 million new cases, 8.2 million cancer deaths & 32.6 million people living with cancer. [1] Incidence of cancer in developing countries is increasing although; Cancer is not yet among the top ten leading causes of death there. [2] It is estimated that 56% of all cancer deaths occur in developing countries. [3] Currently, India is experiencing an epidemiological transition and this is also reflected in a growing burden of non-communicable diseases including cancer. [4]

Chhattisgarh, a tribal dominated state in central India, has a population of 25.6 million with 30.62% of them being coming under scheduled tribes (Census 2011). It consists of 27 districts divided into

5 divisions (i.e. Raipur, Durg, Bastar, Sarguja, Bilaspur) (Figure-1). Regional Cancer Centre (RCC), Dr. B.R. Ambedkar Memorial Hospital, Raipur, is the only tertiary care Government cancer Hospital & referral centre for cancer patients in state of Chhattisgarh. It drains whole Chhattisgarh and also patients from adjoining states like, Odisha, Bihar, Jharkhand, Madhya Pradesh and Maharashtra.

But variable cancer patterns in different geographical regions have been observed and it may be dependent on genetic, environmental, dietary, socio-demographic and other factors. [5] In absence of well-established population based cancer registry system, hospital based record analysis provide useful information for understanding these factors affecting the pattern of cancer and help in undertaking further studies in identifying additional associated factors of importance for developing appropriate strategies. There is a lack of published literature in this regard in the state of Chhattisgarh. Thus, the present hospital-based study was undertaken in this Regional cancer centre to determine the trend of various types of cancers among patients attending from different parts of the state.

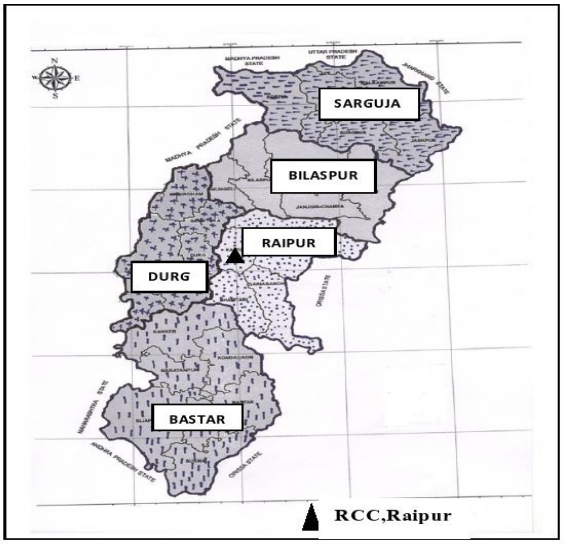


Figure 1-Map of Chhattisgarh showing five divisions.

MATERIALS AND METHODS

It is a record based retrospective study. All registered cases of cancer patients at RCC, Raipur during the 5 years period of 1st January 2011 to 31st December 2015 were included in the study. Relevant records of all patients registered were obtained from cancer registry of RCC, Raipur. Ethical approval was obtained from the Institutional Ethics Committee of Pt. J.N.M. Medical College and Dr.B.R. Ambedkar Memorial Hospital, Raipur.

The demographic details of the patient are recorded at the reception counter. The information is revised on every visit through computer-based hospital record software. During the study period, adequate measures were taken to recognize and avoid duplication of cases.

STATISTICAL ANALYSIS-

The data were collected and compiled in Microsoft excel and analysed using descriptive statistical methodology.

RESULTS

A total of 16,395 patients were registered at the RCC during the 5 year period i.e. 2011 to 2015.We observed that number of incident cases are showing increasing trend i.e. from 3028(2011) to 3315(2015) (Figure-2). Out of all patients registered 2.65%(435) were from other states. Maximum numbers of patients were from Raipur division followed by Bilaspur division (Figure-3). The male: female ratio was found to be 1:1.33 approximately and no major changes were observed during the 5 year period in this ratio (Figure-4).

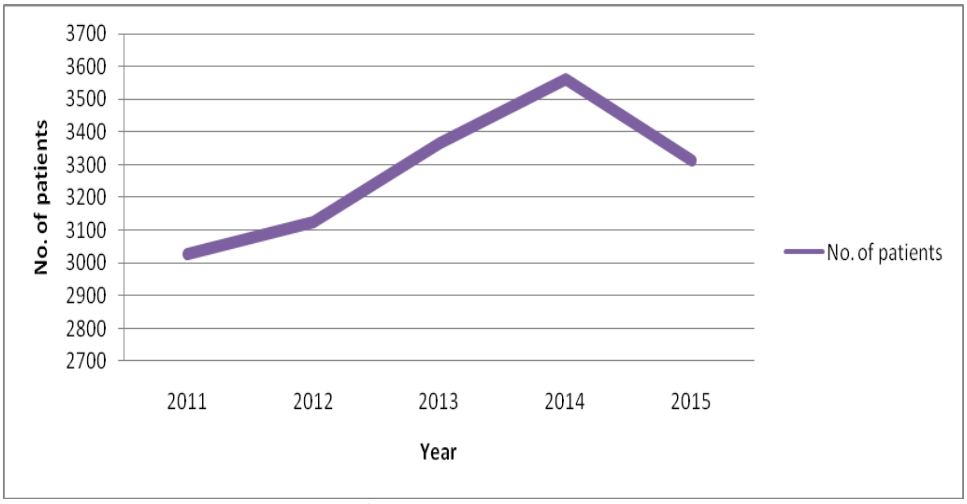


Figure-2- Total number of patients registered during 2011-2015 RCC,Raipur.

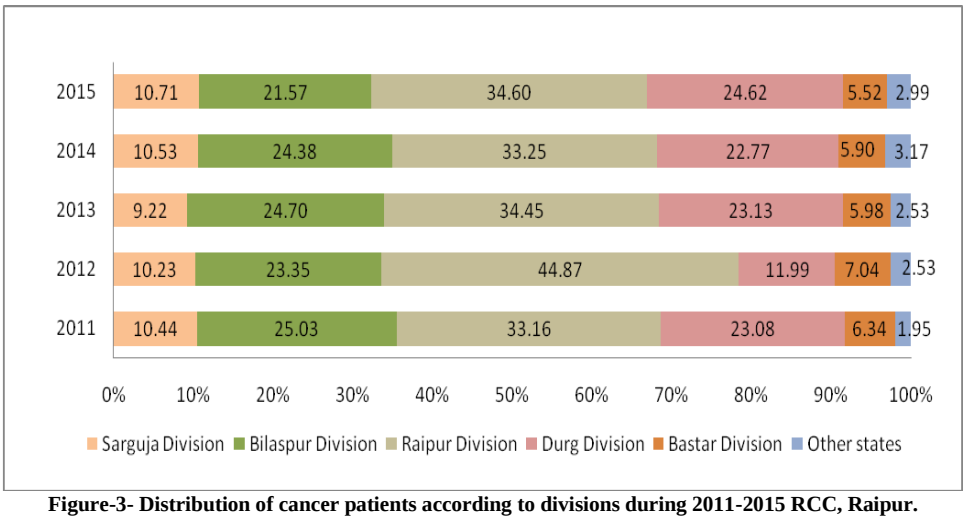
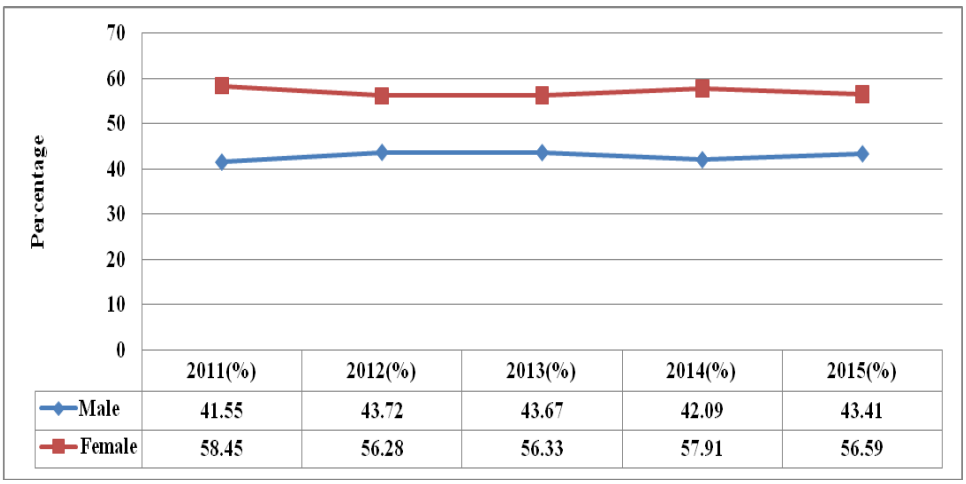


Figure-3- Distribution of cancer patients according to divisions during 2011-2015 RCC, Raipur.



	2011(%)	2012(%)	2013(%)	2014(%)	2015(%)
Male	41.55	43.72	43.67	42.09	43.41
Female	58.45	56.28	56.33	57.91	56.59

Figure-4- Distribution of cancer patients according to gender during 2011-2015 RCC, Raipur.

Age wise distribution showed that majority of male patients [2271(32.30%)] registered were in later stage of life i.e. 45-59 years age group. Similarly, among females, proportion of sufferer was maximum [3920(41.87%)] in later stage of life (45-59 years) as compared to earlier age groups. Second most common age group among females was found to be 30-44 years (28.53%), whereas that among males was >60 years (30.29%). The paediatric age

group has least contribution to the total patient load i.e.537 (3.28%) (Table-1)

Table-1-Distribution of cancer patients according to age group and gender during 2011-2015 RCC, Raipur.

	Male		Female		Total	
Age group	N	%	N	%	N	%
<14	320	4.55	217	2.32	537	3.28
15-29	698	9.93	498	5.32	1196	7.29
30-44	1613	22.94	2671	28.53	4284	26.13
45-59	2271	32.30	3920	41.87	6191	37.76
>60	2130	30.29	2057	21.97	4187	25.54
Total	7032	42.89	9363	57.11	16395	100

Most commonly reported cancer among male patients was found to be oral cancer followed by stomach cancer and lung cancer. The relative proportion of oral cancer increased from 19.79% in the year 2011 to 24.95% in the year 2015.The top 6 most common cancer reported among male patients were oral cavity, stomach, lung, colorectal, oesophageal and liver cancer. (Figure-5)

Most commonly reported cancer among female patients was cervical cancer followed by breast cancer and oral cancer. The proportion of cervical cancer decreased from 41.93% to 30.86%, whereas that of breast cancer increased from 17.56% to 20.42% during the period of 2011 to 2015.Top six most commonly reported cancer among female patients were cervical, breast, oral cavity, ovary, stomach and colorectal cancer (Figure-6).

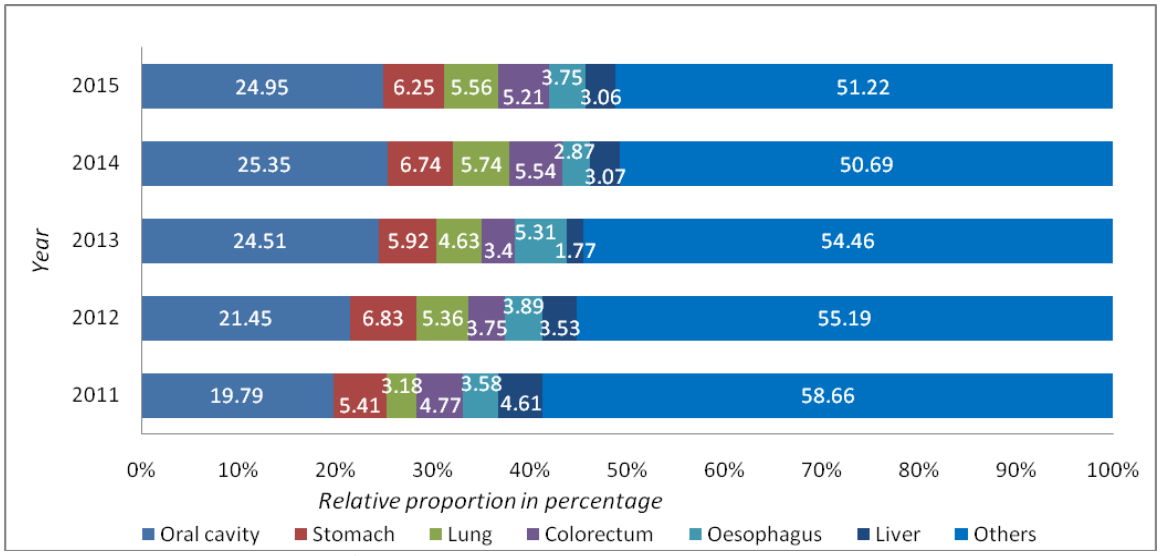


Figure-5- Distribution of common cancers among male patients during 2011-2015 at RCC, Raipur.

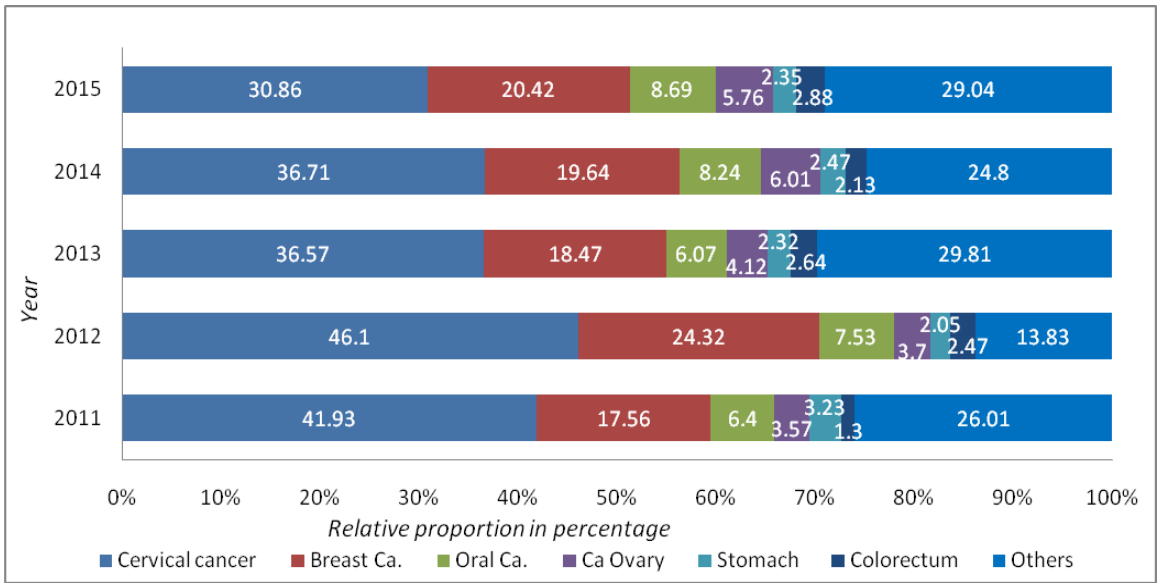


Figure-6- Distribution of common cancers among female patients during 2011-2015 at RCC, Raipur.

DISCUSSION

Study of pattern of cancer in hospital based setting helps to understand the variation and factors affecting the epidemiology of cancer in that particular area, which is evident from the above observations. There is increasing trend of cancer reporting in the present study at RCC, Raipur, which may be due to increased awareness among general population in addition to the result of population aging, as well as, increasingly, an adoption of cancer-promoting lifestyle choices. Maximum numbers of patients registered were from Raipur division which is obvious due to easy accessibility to the Regional cancer centre. Bastar division reported least number of patients at RCC, Raipur which may be due to connectivity issues and inadequate health seeking behaviour among the predominant tribal population. But a similar study done in the Bilaspur district of Chhattisgarh showed 36.1% of the total cancer patients were belonging to tribal population. [6] This decreased proportion in our study may also be explained by the fact that tribal population are distributed all-around Chhattisgarh, although they are more predominant in Bastar division.

In this study the male: female ratio was found to be 1:1.33, showing a female predominance, which was compared with other relevant studies. [7-13] This result is also comparable to the finding of a similar study done in Bilaspur district of Chhattisgarh, which showed two-third proportion for female patients. [6] Maximum proportion of cancer patients were in the age group of 45-59 years in our study. This result contradicts the finding of a similar study done at Chandigarh where maximum proportion of patients were in the >60 years age group. [14] Present study also highlights the early onset of cancer among females as compared to male population.

Top six most commonly reported cancer sites among male patients in this study were oral cavity, followed by stomach, lung, colo-rectum, oesophagus and liver. Oral cavity cancer was most common cancer among male patients which was akin to the finding from a similar study done in Eastern Uttar Pradesh, India. [7] But it contradicts the results of similar studies done in Punjab and Chandigarh, which showed Lung as the most common cancer among males. [15,16] Increasing trend of oral cancer among male patients may be attributed to the increased use of tobacco related product in Chhattisgarh, which is evident from the results of Global adult Tobacco survey, 2009-10. [17]

Among female patients, the top six leading cancer sites were cervix followed by breast, oral cavity, ovary, stomach and colo-rectum. The most commonly reported cancer among female patients came out to be cervical cancer which is in agreement with an equivalent studies done in Allahabad, North India and West Bengal, [18,19] but contradicts the study done in Punjab which showed breast cancer as most prevalent. [10] Further research is required to understand the increasing trend of breast cancer and decreasing trend of cervical cancer among female patients in this study.

CONCLUSION AND RECOMMENDATIONS

This hospital record based study indicates at least the base-line data of cancer of Chhattisgarh. Proportion of tobacco associated cancers i.e. head and neck cancer are showing increasing trend among both males and females in Chhattisgarh. Hence there is urgent need to address it by effective implementation of COTPA Act along with Behaviour Change Communication (BCC) strategies as soon as possible. Higher proportion of cervical and breast cancer among females has to be responded with robust population based screening programme throughout the state. More over ovarian cancer came into notice with increasing trend gives an opportunity for a researcher a new direction to explore the cause. Tertiary care institutions like RCC, Raipur should reach the tribal dominated unreached areas like Bastar

through regular outreach programmes, so that more incident cancer cases are reported and referred at the right point of time. Collecting and maintaining quality cancer data has been a major obstacle for making strategies against cancer. Although ICMR has started National cancer registry programme, tertiary care institutions must start adapting to ICD-10 classification themselves to contribute in providing quality cancer data. Finally, prevention is the best strategy to win the war against cancer and preventive oncology is going to be a major weapon in this struggle.

REFERENCES

1. GLOBOCAN 2012: Estimated Cancer Incidence, Mortality, and Prevalence Worldwide in 2012. Lyon, France: IARC Press; 2012, Available at: Globocan.iarc.fr/Pages/Fact_ sheets_cancer.aspx, [Accessed on December 5,2016].
2. Lopez AD, Mathers CD, Ezzatti M, Jamison DT, Murray CJL. Global and regional burden of disease and risk factors, 2001: systematic analysis of population health data. Lancet 2006;367:1747–57.
3. Shibuya K, Mathers CD, Boschi-Pinto C et al. Global and regional estimates of cancer mortality and incidence by site. BMC Cancer 2002;2:37.
4. Joshi R, Cardona M, Iyengar S et al. Chronic diseases now a leading cause of death in rural India—mortality data from the Andhra Pradesh Rural Health Initiative. Int J Epidemiology 2006;35:1522–29
5. Sharma RG, Kumar R, Jain S, Jhajhria S, Gupta N, Gupta SK. Distribution of malignant neoplasms reported at different pathology centers and hospitals in Jaipur, Rajasthan. Indian J Cancer. 2009;46:323-30.
6. Yogesh Jain, Raman Kataria et al, Burden & pattern of illnesses among the tribal communities in central India: a report from a community health programme, Indian J Med Res 141, May 2015, pp 663-672.
7. Moujhuri Nandi et al, Audit of Cancer Patients from Eastern Uttar Pradesh (UP), India: A University Hospital Based Two Year Retrospective Analysis, Asian Pac J Cancer Prev, 14 (9), 4993-4998.
8. Malhotra V, Shah BS, Sabharwal S. Pattern of cancer in Dayanand Medical College & Hospital, Ludhiana (A ten year retrospective study), Ind. J. Pathol. Microbiol. 44(1):27-30,2001.
9. Gaur DS, Kishore S, Harsh M, Kusum A, Bansal R. Pattern of cancers amongst patients attending Himalayan Institute of Medical Sciences, Dehradun. Indian J Pathol Microbiol 2006;49:193-8.
10. Banerjee AK, Bhattacharya N, Chowdhury MK, Chattopadhyay R, Sengupta J. Incidence of malignancy in Bankura (A retrospective study). J Indian Med Assoc 1944;92:400-2.
11. Shah A, Jan GM. Pattern of cancer at Srinagar (Kashmir). Indian J Pathol Microbiol 1990;33:118-23.
12. Sharma RG, Ajmera R, Saxena O. Cancer profile in eastern Rajasthan. Indian J Cancer 1994;31:160-73
13. Rao DN, Ganesh B. Estimate of cancer incidence in India in 1991. Indian J Cancer 1998;35:10-8.
14. Munesh Kumar Sharma et al, Epidemiological Trends of Cancer Morbidity at a Government Medical College Hospital, Chandigarh, India, Asian Pacific J Cancer Prev, 13, 3061-3064.
15. Ramnika Aggarwal et al, 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 Mar, Vol-9(3): XC05-XC07.
16. Sharma RG et al Spectrum of malignancies in Jaipur region (2004-2008) Indian Journal of Cancer, January–March 2014, Volume 5, Issue 1.
17. Global adult Tobacco survey ,GATS India Report 2009-2010, Ministry of Health and Family Welfare, Government of India, New Delhi, Available at, www. mohfw.nic.in, (Assessed on December 10,2017).
18. Ravi Mehrotra et al, Spectrum of Malignancies in Allahabad, North India:

A Hospital-based study Asian Pacific J Cancer Prev, 9, 525-528.

19. Karmakar R, Bandopadhyay A, Barui G, Maiti PK, Bhattacharya N, Chaudhuri MK. Pattern of cancer occurrence in rural population of West Bengal - a hospital based study. J Indian Med Assoc. 2010;108:505-06.

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