

Retrospective Observational Study of Increasing Trend of Carcinoma Breast in Rural Region

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Abstract

Background: Breast cancer is a major global cause of illness and mortality. Breast cancer is still a serious public health problem despite improvements in diagnosis and treatment, especially in rural areas with limited access to medical facilities and screening program.

Objective: This retrospective observational study aims to investigate the increasing trend of carcinoma breast in rural regions and identify factors contributing to this trend.

Material& Method: Data were gathered from the medical records of individuals who received a breast cancer diagnosis throughout a five years period, from 2016 to 2022. Women with breast cancer who lived in rural areas and sought hospital treatment were included in the study. The patients' demographic information, clinical traits, and therapeutic outcomes were examined.

Results: The study discovered a significant upward trend in incidences of breast cancer in rural areas, with older age groups having a higher incidence rate. In contrast to metropolitan areas, there was a noticeable delay in diagnosis and treatment in rural areas. The increasing tendency was linked to reasons such as a lack of knowledge, ineffective screening programmes, and restricted access to healthcare services.

Conclusion: In order to address this rising trend in breast cancer, the findings point to the necessity for better screening program and access to healthcare facilities in rural areas. Public health initiatives should emphasize raising breast cancer awareness and educating the public, especially elderly women in rural regions. Further investigation is required to pinpoint additional variables fueling the trend and to create practical countermeasures for prevention and early detection of carcinoma breast in rural regions.

Keywords: Breast Carcinoma, Cancer, Rural, Cancer Screening, Medical Records.

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Introduction

Breast cancer is the most common cancer among women worldwide, and its incidence is increasing rapidly in developing countries, including rural areas. [1] Several studies have reported the increasing trend of breast cancer in urban areas, but limited studies have been conducted in rural regions. [2] Rural regions have unique challenges in terms of access to healthcare services, limited awareness, and cultural beliefs that may hinder early detection and timely treatment of breast cancer. [3]

Although breast cancer has traditionally been thought of as a disease that predominantly affects urban women, recent studies have shown that its incidence is also increasing in rural areas. This trend has been attributed to a variety of factors, including changes in lifestyle, dietary habits, and environmental factors. [4-7]

Nearly 178000 cases are being diagnosed in worldwide every year. The crude incidence in India is 135.3 incidences/lakh (2016) and in MP it is 83.1/lakh/year.

Therefore, it is crucial to investigate the increasing trend of breast cancer in rural regions and develop strategies to address the issue. Retrospective observational studies are an essential tool for exploring the patterns of disease incidence and identifying risk factors associated with disease outcomes.

The findings of this study will contribute to the understanding of the burden of breast cancer in rural regions and inform the development of effective strategies to address the issue. Additionally, the study will provide valuable insights into the factors contributing to the increasing trend of breast cancer in rural areas, which may differ from those in urban areas. The results of this study will have implications for policy and practice in the prevention, early detection, and treatment of breast cancer in rural regions.

The aim of this study is to conduct a retrospective observational study on the increasing trend of carcinoma breast in rural regions. The study will investigate the incidence of breast cancer in rural regions, as well as the possible factors contributing to this trend.

Methodology

Study Design: This study will be a retrospective observational study. Data will be collected from medical records of patients diagnosed with breast cancer from various healthcare facilities in rural regions. The study period will be from January 2019 to December 2022. Patients who meet the inclusion criteria will be identified using ICD codes for breast cancer. The medical records of these patients will be reviewed to collect data on patient demographics, clinical characteristics, and treatment history.

Inclusion Criteria:

- Patients diagnosed with breast cancer.
- Patients residing in rural regions.
- Patients diagnosed between January 2019 and December 2022.

Exclusion Criteria:

- Patients with incomplete medical records.
- Patients with a history of breast cancer prior to the study period.

Data Collection: Data will be collected using a standardized data collection form.

Data Analysis: Descriptive statistics will be used to summarize the data. The incidence of breast cancer in rural regions will be calculated by dividing the number of cases by the total population of the rural region during the study period. The possible factors contributing to the increasing trend of carcinoma breast in rural regions will be analysed using univariate and multivariate logistic regression analysis.

Ethical Considerations: Patient confidentiality will be maintained by de-identifying the data and storing it in a secure

location. Informed consent will not be required as this is a retrospective study and no patient identifiers will be collected

Results

The result was started with the comparison of the incidence of the breast carcinoma in India as well as in MP of year 2016, 2017, 2018 to show the burden of breast cancer. [8]

Table 1: Showing comparison of incidence between India and Madhya Pradesh

	2016	2017	2018
India	142283	150842	159924
Madhya Pradesh	8334	8858	9414

The above table clearly depicted there is a rise in cancer incidence in India as well as Madhya Pradesh.

The approximate number of breast carcinoma in India in 2016 was 118000 (95% uncertainty interval, 107000 to 130000) 98.1% of which were female. Over the Last 26 years the age standardized incidence of breast cancer in female increased by 39.1% (95% uncertainty interval, 5.1 to 85.5) from

1990 to 2016, with the increase observed in every state of India. [8]

In India breast cancer accounted for 13.5% (178361) of all the cancer causes and 10.6% (90408) of all death with a cumulative risk of 2.81. [8]

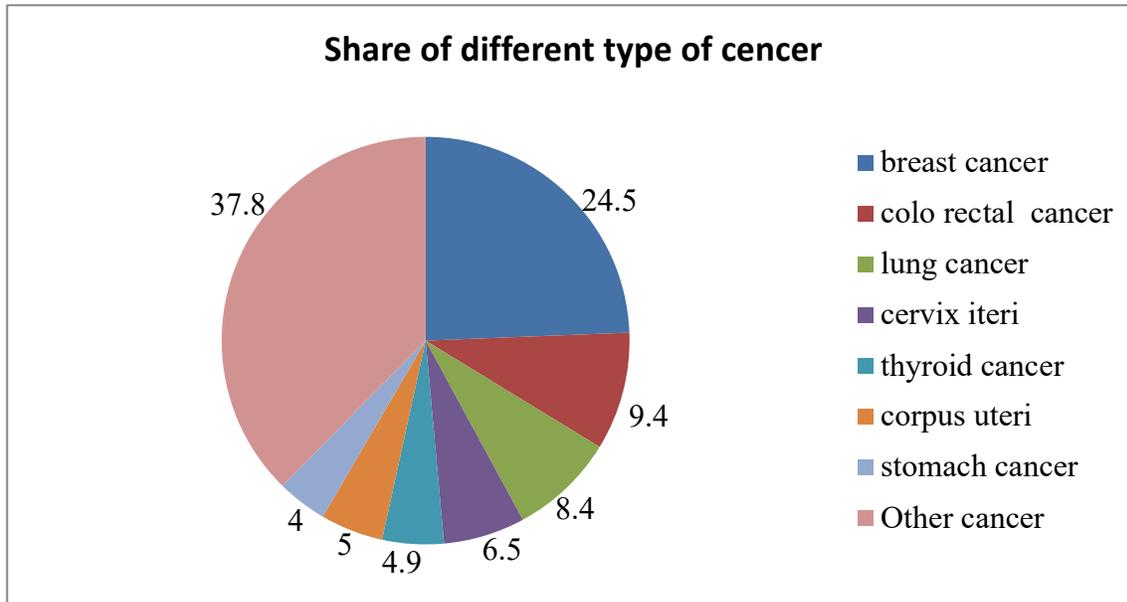


Figure 1: Showing percentage share of different type of cancer in world [9]

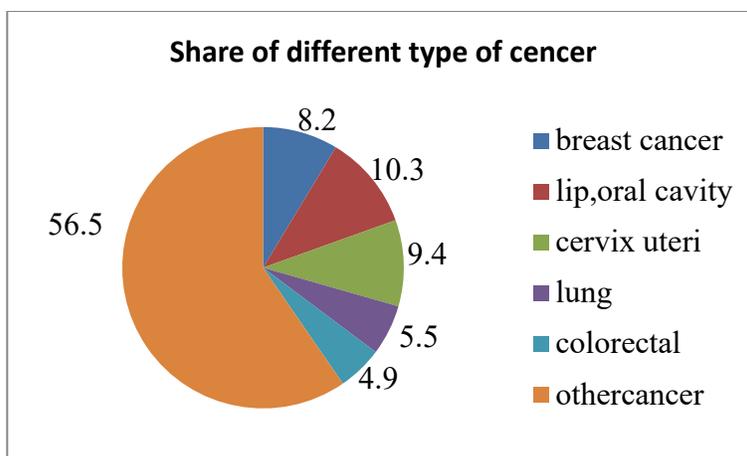


Figure 2: Showing percentage share of different types of cancer in India [9]

These studies above have been based on the incidence of breast cancer, the trend and projection and pattern of development of cancer of the breast. The trend has been found to vary along the different parts of Madhya Pradesh, different age groups, different ethnic groups, different geographical terrain and different living standard based on social and economic well-being. Time trend have also changed the incidence of appearance of

new cases of cancer of breast in which were studied group from time to time.

MP registered 11501 breast cancer in 2020 and mortality due to breast cancer was 4278 wide reference national cancer registry program. Bhopal in MP had the highest share, nearly 31% of breast cancer cases registered among female patient between 2012 to 2015 (courtesy free press journal) [10]

Table 2: The crude incidence rate of carcinoma of breast in female in few towns of MP as fallows

City / Town	Crude incidence of breast cancer
Gwalior	0.53
Morena	11.59
Bhind	-
Datia	-
Chattarpur	-
Sagar	8.72
MP	0.53

Although the above data shows the crude incidence of total cases of breast cancer in the areas, a steep rise of breast cancer in rural areas of the region when the rural population coming to these hospitals were studied. After thorough internet searching, we were unable to find any data which indicate the incidence of breast cancer cases in rural population. In the sager district cancer case found as per available records showed in table 3.

Table 3: Breast cancer case recorded hospital as per record.

2019		2020		2021		2022	
Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
22	13	13	9	13	9	26	12

The above clearly depicted that breast cancer cases were continuedly increasing in small district of Madhya Pradesh with clearly huge difference between urban and rural area.

Discussion

Breast cancer produces an overwhelming load of carcinoma in human species especially in female and is one of the leading causes of morbidity and mortality in female and male also, though male are multiple times less affected by this disease. Breast cancer occurs mainly in middle and old women but young age is no bar. The cancer also depends upon genetic pattern and often found in close relative of the breast cancer survivors. [11-13]

The socioeconomic status, the use of hormone dependent contraceptive, the habit of smoking, and use of other chemical as lubricant, disinfectant, pesticide, insecticides, ornaments of different nature, use of smoked food and chemical used for aesthetic purpose of breast are all leading cause of carcinomas of breast. [14] The study trend in this study which ranges from nearly 20 years observed at various local data. Till date gives an overview that there is steep rise of breast cancer in our studied population. In our study we found that grossly there is a wide difference in the incidence of breast cancer in urban and rural population till few years back and presently. Incidence of likelihood of developing breast cancer in urban population was as high as one in 22 women as compare to one in 60 women in rural population. [15]

Rural population had lower cancer incidence rate similar pattern has been observed worldwide which shows high breast cancer incidence rate in developed country and much lower in less developed country with regards to our country the cancer registry data indicate that there was large difference in breast cancer between rural and urban region in India. [16] However, the reason for this were still under study. A key dissimilarity noticed in urban and rural Indian women is the prevalence of central adiposity and the age of first full-term pregnancy. The physical activity label of the

women of the areas is also another factor for early cancer development in urban population. However the epidemiological transition state through which our country presently going through is observing a very drastic change in the phenomenon and there is increase breast cancer incidence in our rural population. [17]

The rural population undergoing these changes mostly lies between age group of 30-45 years. On considering the stage of presentation of these women rural and urban area possess a great difference owing to the change in living habit and ongoing epidemiological transition state specially in developing rural areas as compared to urban population these rural communities face the challenges not only to living standard but also to the geographic location religion ethnicity economic status, health factors and parity considering all the above factor in the vogue it is analyzed that there is a trend suggestive of increase in breast cancer incidence in the rural region however, since not all rural community are same hence there are multitude of factors which need to be studied and analysis to be done regarding establishing the fact that there is definitive rise of breast cancer incidence in rural areas.

Conclusion

This review highlights the increasing trend of carcinoma breast in rural regions and the various factors contributing to this trend. Multiple factors are responsible for breast cancer in urban area which include sedentary life style, little or no exercise, constipation of junk food and alcohol leading to obesity and late marriage, minimal breast feeding. The rural women are equally at the risk but with different context, which include poverty, zero breast cancer awareness, fear of examination and multiple social and cultural taboos.

Breast cancer has nowadays become a lifestyle disorder which has already affected

the urban population and is now grabbing the rural population and steep rise is being observed in the incidence of breast cancer. The findings suggest that there is a need for increased awareness, improved access to healthcare facilities, and early diagnosis and treatment to reduce the burden of breast cancer in rural areas. Further research is needed to understand the complex interplay between the various factors contributing to this trend.

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