

Prevalence of Breast Cancer in different geographical regions: A Retrospective Study from Central Nepal

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Abstract

Background: Breast cancer is the second most common malignancy among Nepalese women with prevalence of 28.5 per 100,000 population. In Nepal due to lack of uniform health resources and awareness, breast cancer cases reporting is different in three geographical regions. This study aims to look at the difference in prevalence of breast cancer in different geographical regions.

Materials and Methods: A single center descriptive retrospective study to analyze the prevalence of breast cancer in different geographical regions among patients visiting BPKMCH from January 2014 to December 2018 was designed and patients' information available at medical record were obtained. Analysis was completed with SPSS Statistics.

Results: During the period of 5-year total 2115 cases of breast cancer were seen at the Department of Surgical Oncology at BPKMCH. These cases comprised of 2052 female and 63males. The mean age of presentation was 48 years. Maximum number of cases 65% (1376) were from terai region of Nepal.

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Conclusions: This study provides clue regarding higher cases of breast cancer among individuals from terai region of Nepal.

Keywords: Cancer, Breast, Prevalence, Terai, Nepal

Introduction

Breast cancer has long been recognized as one of the common malignancies among women in developed and developing countries. Recently, global incidence of breast cancer has increased rapidly, and portrays the tendency to be a crucial cause of mortality in women of reproductive age.¹ Early detection, early diagnosis and timely treatment holds the key to improve the survival rate among breast cancer patients.

Besides sex, age is the most important risk factor for the development of breast cancer. A woman's risk of breast cancer increases throughout her lifetime. The annual incidence of breast cancer in American women ages 80–85 is fifteen times higher than that in women ages 30–35.² Other major cause of breast cancer is also related with a positive family history associated with BRCA1 and BRCA2 mutations.³

Studies have shown that the effect of age on breast cancer risk is also affected by ethnicity.

African-American women under age 50 have a higher age-specific incidence of breast cancer than American white women of the same age. Asian women residing in Asian countries have a very low lifetime risk of breast cancer, but Asian women who are born in North America have the same lifetime risk of breast cancer as American white women.²

In context Nepal, GLOBOCAN 2020 suggested carcinoma breast as the third most common cancer accounting for 9.6% of all new cases in both sex and second most common cancer in female of all ages (17.1%) after cervix cancer (19.4%).⁴ This study is aimed to evaluate geographical variation in prevalence of carcinoma breast among patients visiting BP Koirala Memorial Cancer Hospital (BPKMCH).

Materials & Methods

A single-center retrospective observational study approved by the Department of Surgical Oncology, B.P. Koirala Memorial Cancer Hospital (BPKMCH), Bharatpur was

designed. The study design involved review of demographic record of patients with breast cancer and therefore patient approval was not obtained. Total cases of breast cancer cases attended at surgical oncology OPD from January 2014 to December 2018 were obtained from cancer registry of BPKMCH. Age, gender and address of histopathologically diagnosed cases of breast cancer were recorded. Re-entry of each patient profile was assessed and were excluded by cross-referencing name, address and hospital number. All benign cases were excluded from study.

Data set were entered and descriptive analysis was performed with SPSS Statistics.

Results

Total 2115 cases of breast cancer cases were recorded during the period of 5 year, including 2052 female and 63 male patients. The mean age of presentation was 48 years with standard deviation of 11.74. Highest number of cases were recorded in the year 2017 (496, 23.5%) whereas least number of cases were recorded in the year 2018 (314, 15%).

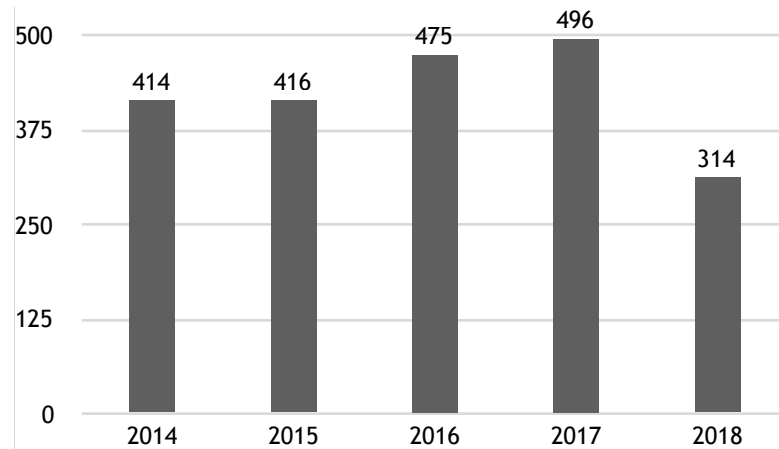


Chart 1.1: Bar Chart showing the number of cases in each study year.

Cases from Himalayan and Hilly region constituting 55/75 districts comprised 31% (663) of cases while Terai region with 20/75 districts comprised of 65% (1376) of cases. More number of cases were recorded from Champaran region of India then from Himalayan region of Nepal (76 Vs 48). Chitwan district where BPKMCH is located had the highest number of breast cancer cases (127) during 5-year period. Together with Chitwan, BPKMCH had majority of breast cancer patients from neighboring districts namely Nawalparasi, Rupandehi, Parsa, Bara, Makwanpur, Dhading and Tanahu which made 28% (592) of cases. Despite being comparatively far from hospital location, number of breast cancer cases from Morang

and Jhapa, were similar to those from Chitwan (127 Vs 122 Vs 117).

Discussion

In 2020, there were 2.3 million women diagnosed with breast cancer and it accounted for 685,000 death worldwide.⁵ In context of Nepal, there were 1700 new cases and 870 deaths relating to breast cancer in the year 2012 which has increased to 1973 new cases and 1049 deaths due to breast cancer in the year 2020.^{4,6} This increase could be due to changes in lifestyle with subsequent increase in prevalence of modifiable risk factors like obesity, smoking and alcohol consumption, hormonal therapy and change in breastfeeding practices.

Breast self-examination and appropriate screening in high-risk individuals are considered as the effective method for early detection of breast cancer. Recent study conducted to assess the overall knowledge of breast cancer in Nepal had shown poor knowledge on breast cancer risk factors, symptoms and curability among higher secondary school students in Western Nepal.⁷ Lack of proper knowledge regarding breast cancer symptoms, risks, screening methods and treatment options among Nepalese

women could also explain the rise in incidence as well as mortality due to breast cancer. Several other studies in breast cancer among Nepalese women, the highest incidence of breast cancer has been reported in the age group 45-50 years^{8,9} and this study corroborates with these findings as the mean age of women visiting BPKMCH with breast cancer over the 5-year period was 48 years.

Cases of breast cancer were more in terai region of Nepal accounting for 65% of total cases in our hospital while the number of cases were less from Himalayan and Hilly region. Nepal is culturally diverse with different ethnical groups having their own practices and beliefs which significantly alter their lifestyles. As breast cancer is well documented to vary according to race and ethnicity¹⁰, the difference observed in this study could also have resulted from the diversity of culturally distinct population in three different geographical regions of Nepal.

There are limitations to this study. Firstly, it is a single center retrospective study and might be insufficient to describe the reasons for difference in prevalence of carcinoma breast cases among different regions of Nepal. Histological diagnosis and treatment outcome

were not assessed. Further multicentric prospective study design to estimate the stronger characterization of demographic profile would be effective.

In conclusion, our study demonstrates the higher burden of breast cancer in terai region, with mean age of 48 years. Apart from consideration of cases underreporting from Himalayan region, the difference in cultural beliefs and practices among population in each region of Nepal could alter the distribution of risk factors and thus the prevalence of breast cancer.

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