

RESEARCH COMMUNICATION

Younger Women are Affected by Breast Cancer in South India - A Hospital-based Descriptive Study

Aman Chauhan¹, SH Subba^{2*}, Ritesh G Menezes³, B Suresh Kumar Shetty³, Vikrant Thakur⁴, Sarabjeet Chabra¹, Raj Warriar⁵

Abstract

Introduction: Breast cancer is one of the most common cancers in the world among women and its effective control depends upon sufficient knowledge about its epidemiology at the regional as well as global levels. **Materials and methods:** A record based descriptive study was conducted in a tertiary care hospital situated in coastal Karnataka in South India. Cases included were all histopathologically diagnosed cases of breast cancer not otherwise specified among females that were treated in the hospital in the 3 years period of 2005-2007. A total of 112 cases were found and their data retrieved and analyzed using SPSS. **Results:** Mean age of the subjects was 45 years (SD=10.4) (range 23 -70). Age distribution showed two peaks at 35-39 years and 50-54 years. Some 12 (11 %) patients had a previous history of breast cancer and 9 (8%) had a family history. Among the patients who had history of breast cancer in the past, 61.5% were during the pre-menopausal age. **Conclusion:** The age affected by breast cancer was lower than usually seen in other parts of the world and there was more of premenopausal occurrence which has implications on their own and their relatives' chances of acquiring breast cancer later. The findings show that breast cancer control efforts and recommendations in different parts of the world have to be tailored to the regional epidemiological patterns.

Keywords: Breast cancer - age distribution - South India

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Introduction

Breast cancer is the second most common cause of death after lung cancer among women in the world. (Stewart and Kleihues, 2003) Breast cancer related deaths range to about 55% of all new cases each year in low and middle income countries. (Curado et al, 2007) In India the incidence of breast cancer is almost one third to one fourth that in USA but it is still a leading cause of cancer among women in many regions. (Ferlay et al, 2004) The age adjusted incidence rate in India is 22.9 per 100,000 population, where as in North America it is nearly 76 per 100,000. Mortality from breast cancer in India ranges to 11.1 as compared to 14.7 in USA which is higher. (GLOBOCAN, 2008) Despite lower incidence in India, the total number of cases and the net mortality is high because of the large population, inadequate screening programs and lack of education. To reduce this increasing load of mortality due to breast cancer we need to lay emphasis on early detection and increased use of systemic therapy and that can happen if we have a better understanding of the trend, age group involved with other risk factors.

Materials and Methods

The study design was descriptive, covering a period of 3 years from 2005-2007. It was conducted in a hospital situated in coastal Karnataka in South India. This hospital is a multidisciplinary one, providing tertiary cancer care to patients in coastal Karnataka and neighbouring areas. After obtaining approval from the institutional ethics committee, the medical records department was approached to obtain case files of all the cancer cases in the period. Inclusion criteria were female breast cancer cases with not otherwise specified (NOS) type diagnosed histopathologically, constituting 80-90% of the total breast cancer cases. Other types like Paget's disease, inflammatory breast cancer, male breast cancer etc. were excluded because they are rare and their pathophysiology, aetiological factors, prognosis and management are also varied and different from this group. A total of 112 patients fulfilled the inclusion criteria and their data regarding age, past history and family history, etc. were retrieved and collected on a predesigned proforma. Data were entered

¹Kasturba Medical College, Manipal, ²Department of Community Medicine, ³Department of Forensic Medicine and Toxicology, Kasturba Medical College, Mangalore, ⁴Indira Gandhi Medical College, Shimla, ⁵Manipal University, Manipal, India *For correspondence: sonuhsubba@yahoo.com

and analyzed using SPSS, version 11.5, statistical analysis programme (SPSS, Inc., Chicago, IL).

Results

A total of 112 patients were treated for breast cancer (NOS) in the 3 years and their mean age was 45 yrs (SD=10.4). Minimum age was 23 years and maximum was 70 years and median age was 46 years (IQR 16years). The age distribution showed two peaks at 35-39 years and 50-54 years, unlike the usual single peak which is normally seen near 45-50 years. Of the total, 12 (11%) patients had past history of breast cancer. Among the ones who had history of breast cancer in the past, 61.5% were during the pre-menopausal age. Family history of breast cancer was seen in 9 (8%) of the cases.

Discussion

Age is one of the most important risk factor for breast cancer. It is a common observation that the risk of breast cancer increases with advancing age. Median age of 46 years in our patients with breast cancer is much lower than median age seen in American population at 62 years. (Anderson et al, 2006) The mean age of women with breast cancer in our study is 45 years which is younger than seen in epidemiological reports on breast cancer elsewhere in developed countries. (Anderson et al, 2007) Other Indian studies have shown lower mean age that is closer to that in the present study. (Sandhu et al, 2010; Gupta et al, 2002) This shows that Indian population have lower age at presentation in contrast to the western population and calls for having different recommendations of screening age.

Our study shows that there are two peaks in the age at diagnosis of breast cancer cases at 35-39 and 50-54 years. The latter peak is expected because with age the duration of hormonal, radiation and other carcinogenic exposure increases and this peak is also common with the peak seen in western countries, but the peak at 35-39 is uncommon in those countries. This is different from the linear pattern showing increasing peak toward post menopausal age group as observed in the most Caucasian populations. (Althuis et al, 2005; McPherson et al, 2000) However Asian populations among them also show bimodality, which is also seen among American women but their peaks are at 50 and 70 years that is much older than found in our and other Asian populations. (Breast cancer UK, 2009; Leong et al, 2007; Althuis et al, 2005) Increasing use of oral hormonal contraceptives, late menarche, radiation exposures, smoking all have been attributed to the breast cancer in younger population (Gajalakshimi et al, 1998). Concept of westernization in terms of dietary habits and life style which has increasingly becoming popular among the young age group is said to be a major factor responsible for increasing incidence of breast cancer in younger population. Yet, the western population themselves who have same risk factors do not have onset and peak at younger ages. Therefore this may not be the best explanation for occurrence in younger age group and there may be some genetic tendency of the Asian

population to develop breast cancer earlier or there might be a role of environmental factors yet to be explored.

Our study shows higher occurrence of premenopausal cancer with almost half of the cases occurring in the age group at or below 44 years. Cancer occurring in the premenopausal group are characterized by high grade with poor prognostic characteristics resulting in higher mortality rate. (Gajalakshimi et al, 1998) Premenopausal cancers are influenced by different set of risk factors as compared to post menopausal cancer and they also have high rates of recurrence in contralateral breast (Kruk, 2007; Gajalakshimi et al, 1998) Hence it is very important to implement screening programs for breast cancer as well as educating these women regarding various risk factors for breast cancer.

In the present study, cases that had been previously diagnosed with breast cancer and had developed breast cancer in contra lateral breast was 11% which is much more than that seen in a Bahrain study where it was only 2.9%. It has been seen that the family history of breast cancer and the late age of first child birth are the strongest risk factors for developing contra lateral breast cancer. (Gajalakshimi et al, 1998) Of those who had history of breast cancer in the past, 61.5% were pre menopausal and rest were post menopausal. Hence past history of disease is far more consequential and important in pre menopausal group, the importance of this lies in the fact that pre menopausal women with past history should be considered at high risk for breast cancer and should be followed up and screened regularly. This finding correlates with the study that the premenopausal breast cancers are at the greatest risk of recurrence. (Gajalakshimi et al, 1998)

Family history of breast cancer was present in 8% of the cases which is slightly lower than 10% seen in developed nations as well as that seen in Bahrain and Malaysia where family history was seen in 20% & 16.2% respectively but in Shanghai the same was 3.2% (Yuan et al, 1988; McPherson et al, 2000; Yip et al, 2008; Al Shad et al, 2009) This becomes important as the risk of getting breast cancer is higher when age at diagnosis in a first degree relative is lower as seen in the subjects of our study. The increased risk of a woman's development of breast cancer by age of 65 years is 10% if diagnosis in relative was at 35-39 years as compared to 5% only if the same diagnosis was at a latter age of 50-54 years. Hence family history in our population attains greater importance by virtue of the disease occurring in much younger age group.

Considering the younger age involvement in the Indian population and their family and personal histories of cancers, it is vital that patients be educated regarding screening at younger ages as well as regular follow up. Women with first degree relative diagnosed with breast cancer should also be special focus of early detection activities. In general they should also be informed about risk of developing breast cancer with intake of alcohols, high fat diet, smoking and no exercise. With better awareness about breast cancer the incidence of this disease can be brought down and the mortality and morbidity can be decreased for which, a coordinated effort by government, health faculty and NGO's is required.

From our findings, family history and past personal history of breast cancer was present in around one tenth of the patients thereby indicating the compounded risk due to lower age group being involved in the present study. This knowledge should be kept in mind when formulating policies for the control of problem in the Indian population.

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