



Epidemiological Studies on Breast Cancer in Kashmir Valley

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Abstract

Breast cancer is the second most common cancer among the female population in India which accounts for about 7% of the Global burden of breast cancer and one-fifth of all cancer types among females in India. While as there is a sharp increase in breast cancer among the female population of Kashmir valley and reaches among the top commonest cancers. During the current study, 226 confirmed cases of breast cancer among women were recorded for the Sher-I-Kashmir Institute of Medical Sciences Soura, Srinagar approximately having 66% of breast cancer patients have local-stage breast cancer, 28% have regional stage, and 6% have distant (metastatic) disease. The minimum and maximum age of the cases were 19 years and 78 years respectively, with the increase in the age there is an incident increase in breast cancer. Most of the cases of breast cancer women were having early menarche from 9 years age [58.41% (n= 132)] and also the majority of the breast cancer cases [46.02% (n= 104)] were from South Kashmir followed by patients from North Kashmir [31.86% (n= 72)] and followed by Central Kashmir [22.12% (n= 50)].

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Keywords: Breast cancer; Age; Menarche; Menopause; Kashmir valley.

Introduction

Breast cancer disease particularly in women, is a life menacing disease which affects women to the part of her body that is connected to her sense of muliebrity and womanhood. Thus, affecting women physically, mentally and socially. It inculcates feeling of fear and trepidation in women, therefore exposing them to an extensive emotional trauma. Cancer of breast is usually detected as a palpable mass or as a mammographic abnormality, it can also be displayed by many other changes in breast area viz; nipple discharge, breast skin change, breast

pain. Breast cancer is a complicated disease that occurs due to deregulation of a number of different signaling cascades associated with breast development at various points in a particular pathway. Breast cancer is a global problem. Worldwide, it is estimated that more than one million women are diagnosed with breast cancer every year, and more than 4,10,000 die from the disease [1]. All women are at risk of breast cancer, with one in eight, developing the disease within their lifetime [2].



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Breast cancer is presently the top cancer in women worldwide, both in the developed and the developing world. The majority of breast cancer deaths occur in low and middle income countries, where most of the women are diagnosed in late stages mainly due to lack of awareness and barriers to access to health services (WHO). The incidence of breast cancer is low in India, but rising. Breast cancer is the commonest cancer found in Indian women and accounts for 27% of all cancers in women [3]. The incidence of breast cancer in developing countries increases, may be with the advent of population growth, changes in lifestyle, changes in dietary habit, changes in environment, migration from rural to urban areas. In India, cervical cancer is a leading type of cancer but the trend is obverse in valley, where high frequency of upper GI malignancies is followed by breast malignancies [4]. Valley Kashmir experiences a higher death rate of breast cancer patients than that of rest of India. The high mortality rate of breast cancer patients in Kashmir can be attributed to its socio-cultural structure [5]. By every passing year, there comes a profile of increase in the number of cancer patients, as upto now scanty work has been done on this high intensity disease and therefore, the present endeavor is intended to study on epidemiological characteristics of breast cancer patients attending the leading tertiary health care centre of the valley i.e., Sher-i-Kashmir Institute of Medical Sciences, Soura, Srinagar, Kashmir.

Breast Cancer profile varies in different parts of the world, and an epidemiological study will help us to know about the common cancer types prevalent in particular segments of a population, and the risk factors involved.

Material and methods

After the approval from the ethical committee of the Institute and the hospital-based study was conducted on various risk factors associated with breast cancer. A total number of 226 confirmed cases of patients with breast cancer were taken on hospital-based cancer registry at the leading tertiary care centre of the valley i.e., Sher-i-Kashmir Institute of Medical Sciences, Soura, Srinagar, Kashmir. The epidemiological factors are found to be associated with breast cancer patients of the Kashmir valley such as Age, Age at menarche and Menopause, Familial history, Environmental chemicals and pollutants.

Results

At the time of diagnosis, approximately 66% of breast cancer patients have local-stage breast cancer, 28% have regional stage, and 6% have distant (metastatic) disease had been recorded during this study.

Inference: The age distribution among the breast cancer patients was ranging from the minimum to maximum as 19 years to 78 years of age were recorded during this study. Breast cancer incidence rate increases with age and the decreases in incidence rates that occurs in women 80 years of age and older may reflect lower rates of screening (Table 1).

Inference: The data presented in (Table 2) reveals that majority of the respondents (84.96%) didn't know any family history followed by patients having family history (14.16%) and followed by patients those not having any family history (0.88%).

Inference: As far as the menarche age is concerned, the majority of the breast cancer patients were from 9 years age group [58.41% (n= 132)] followed by the 10 years age group [40.71% (n= 92)] while as the least from upper age i.e., 12 years age

group (Table 3).

Inference: As the menopausal status is concerned, majority of the breast cancer patients were post-menopausal, pre-menopausal, peri-menopausal and menopausal after pan hysterectomy/oophorectomy are [49.11% (n= 111)], [39.40% (n= 89)], [10.61% (n= 24)], and [0.88% (n= 2)] (Table 4). respectively.

Inference: The data presented in (Table 5) reveals that majority of the breast cancer patients [46.02% (n= 104)] were from South Kashmir followed by patients from North Kashmir [31.86% (n= 72)] and followed by Central Kashmir [22.12% (n= 50)].

Table 1: Breast cancer risk varies by Age.

| S. No. | Current Age | Breast Cancer (N) | Percentage (%) |
|--------|-------------|-------------------|----------------|
| 1 | 11-20 | 1 | 0.44 |
| 2 | 21-30 | 2 | 0.88 |
| 3 | 31-40 | 13 | 5.75 |
| 4 | 41-50 | 79 | 34.98 |
| 5 | 51-60 | 63 | 27.87 |
| 6 | 61-70 | 49 | 21.68 |
| 7 | 71-80 | 19 | 8.40 |
| Total | | 226 | 100 |

Table 2: Distribution of the studied patients as per Any Family History.

| S. No. | Family History | Frequency (N) | Percentage (%) |
|--------|----------------|---------------|----------------|
| 1 | Yes | 32 | 14.16 |
| 2 | No | 2 | 0.88 |
| 3 | Don't Know | 192 | 84.96 |
| Total | | 226 | 100 |

Table 3: Early Menarche status among the breast cancer patients.

| Early Menarche Age | Frequency (N) | Percentage (%) |
|--------------------|---------------|----------------|
| 9 Years | 132 | 58.41 |
| 10 Years | 92 | 40.71 |
| 11 Years | 02 | 0.88 |
| Total | 226 | 100 |

Table 4: Distribution of the studied patients as per Menopausal status.

| Menopausal status | Frequency (N) | Percentage (%) |
|--|---------------|----------------|
| Pre-menopausal | 89 | 39.40 |
| Post-menopausal | 111 | 49.11 |
| Peri-menopausal | 24 | 10.61 |
| Menopausal after Pan Hysterectomy/oophorectomy | 2 | 0.88 |
| Total | 226 | 100 |

Table 5: Percentage distribution of breast cancer patients as per Region.

| S. No. | Region | Frequency (N) | Percentage (%) |
|--------|-----------------|---------------|----------------|
| 1 | Central Kashmir | 50 | 22.12 |
| 2 | North Kashmir | 72 | 31.86 |
| 3 | South Kashmir | 104 | 46.02 |
| Total | | 226 | 100 |

Discussion

The valley Kashmir surrounded by great mountains on all sides (Pir-Panjal range and Himalayan range) has unique tradition, culture, and dietary habits. Measuring the magnitude and distribution of various cancers in community is imperative to ensuring well informed policies on cancer care and prioritizing resource allocation. Further, robust data is needed to inform medical care with highest level of evidence. Hence, cancer registries are considered to be integral part of cancer management in any part of the world. The magnitude and profile of cancer in Kashmir are poorly reported; however, Gastro intestinal cancers are reportedly believed to be the most common. Breast cancer is the second leading cancer in women of Kashmir, but very limited studies have been done on this disease in this state.

The age of the confirmed patients of breast cancer ranges from 19 years to 78 years is recorded as lowest to highest values during the current study. While as the breast cancer incidence rate increases with age and the decreases in incidence rates that occurs in women 80 years of age and older may reflect lower rates of screening. This is in accordance with the observation of [1,6-11]. Majority of the respondents (84.96%) didn't know any family history followed by patients having family history (14.16%) and followed by patients those not having any family history (0.88%). Family history and personal characteristics Family history Women with a family history of breast cancer, especially in a first-degree relative (parent, child, or sibling), are at increased risk for the disease. Compared to women without a family history, risk of breast cancer is about 1.5 times higher for women with one affected first-degree female relative and 2-4 times higher for women with more than one first-degree relative [12,13]. Risk is further increased when the affected female relative was diagnosed at a young age or was diagnosed with cancer in both breasts. It is important to note that the majority of women with one or more affected first-degree relatives will never develop breast cancer and that most women who develop breast cancer do not have a family history of the disease [12]. A family history of ovarian and perhaps pancreatic or prostate cancer is also associated with increased breast cancer risk [14,15]. Women should discuss their family history with their health care provider because it may signal the presence of a genetic predisposition to cancer and the need for a different plan for screening and risk reduction.

As the Menarche age is concerned, the majority of the breast cancer cases (58.41%) the age at menarche was at 9 years, followed by patients with age at menarche was at 10 years (40.71%). Early age at menarche has been recognized as a risk factor for development of breast cancer in many studies [16,17]. In a case control study in Nagpur India [18] found age at menarche less than 12 years was a risk factor for breast cancer.

As the menopausal status is concerned, majority of the breast cancer patients were post-menopausal, pre-menopausal,

peri-menopausal and menopausal after pan hysterectomy/oophorectomy are [49.11% (n= 111)], [39.40% (n= 89)], [10.61% (n= 24)], and [0.88% (n= 2)] respectively. Breast cancer risk increases with earlier menstruation and later menopause [19]. For example, breast cancer risk is about 20% higher among those who begin menstruating before age 11 compared to those who begin at age 14 or older. Likewise, women who experience menopause at age 55 or older have about a 12% higher risk compared to those who do so between ages 50-54 [19]. The increased risk may be due to longer lifetime exposure to reproductive hormones and has been more strongly linked to breast cancer than other subtypes [20].

The majority of cases were reported from rural areas South Kashmir (46.02%), North Kashmir (31.86%) than from urban area Central Kashmir (22.12%). This is in accordance with the study carried out by [7] in which majority of the patients were from the rural area [59.9% (n= 79)] and the remaining from urban area [40.1% (n= 53)]. The majority of the female population lives in rural Kashmir to the tune of 73.51%, though 68.84% of the total Indian population is rural [21].

An overview of the literature reveals that Cancer is a leading cause of mortality and morbidity in the world. Cancer a non-communicable disease creates an epidemic in the whole world and is believed to get worse at the end of this decade. Given this hard fact and looking towards the data available, it is evident that scanty references are available on this aspect and with this idea the present study was undertaken.

Conclusion

Breast cancer is a leading cause of mortality in developing countries like India so raising awareness about the screening procedure and treatment of breast cancer can help in reducing the mortality and morbidity. It is essential that all women have positive family history of breast cancer should be screened. In developing countries like India breast cancer can cause a heavy toll on the lives of the people and is a leading cause of mortality. Further emphasis should be given to the health education which must be provided to women regarding the risk factors related to the breast cancer and the physical activities to prevent the same. While as the early detection of breast cancer has a good prognosis. Henceforth, along with health education on screening of breast cancer, the possibility of initiating cost-effective screening measure needs to be emphasized.

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