INTRODUCTION

Dakshina Kannada is a district of Karnataka state with a population of 2,089,649 as per 2011 census with a density of 430 people per sq.km, released by directorate of census operations in Karnataka. Breast cancer is a disease that instills feeling of dread and fear among many women. It is not only a dreadful disease, but it affects a part of the body that is central to women’s sense of feminity. There is a steady increase in rural breast cancer incidence since rural women are increasingly adopting urban lifestyles, reproductive habits and are also increasingly exposed to similar environmental factors as urban women due to economic development. Material and Methods: A retrospective, hospital record based study was done among patients admitted to a tertiary care hospital from January 2011 to December 2012. Data regarding age, risk factors like marital status and religion along with histological type, tumour grade and stage at diagnosis were retrieved. Data were entered and analysed by frequency, percentage and chi-square test. Results: A total of 109 cases, of which 76 were from rural areas of Dakshina Kannada. Mean age at presentation was 51-60 years among rural and 41-60 years among urban. Among rural women all 76 were married and among urban women 30 were married. Prevalence of breast malignancy was more among Hindus and least among the Muslims. The commonest histological type was Infiltrating Ductal Carcinoma (NOS) and commonest grade was grade 2. Most of them belonged to stage 2 disease. Conclusion: The study suggests that breast cancer patients present late in the progression of disease beyond stage 1 and hence there is a need for improved screening techniques among rural women of Dakshina Kannada. Women should be encouraged to perform breast self-examination and get regular mammograms done as a routine screening procedure.
of multimodal treatment, comprising of local treatment by surgery and radiotherapy, systemic treatment by chemotherapy and hormonal therapy. As a result of inappropriate concentration of comprehensive cancer centers to metros, only a fraction of total breast cancer patients access the services.\(^{8}\)

Need for this particular research in the study area is to create awareness among rural women because they present late in progression of disease.

A compilation of assessment data available in the records was done.

Information about risk factor was obtained through case sheets

Risk factors like age, marital status and religion were considered.

**OBJECTIVES**

1. To study demographic profile, age relations and risk factors such as, religion, marital status involved for breast cancer among women.
2. To assess histological grade and stage among women.
3. To study the clinical and histological correlation of breast cancer.

**MATERIALS AND METHODS**

A retrospective study, covering a period of 2 years, patients admitted from January 2011-December 2012. Study was conducted in a hospital situated in Dakshina Kannada in Karnataka. This hospital is a multidisciplinary one, providing tertiary care to patients in Dakshina Kannada and neighbouring areas of Kerala and Karnataka. After obtaining approval from the Institutional Ethical Committee, the inpatient medical records department was approached to obtain case files of all the breast cancer cases in the period. Risk factors available in the records such as age, marital status, family history and religion was taken.

**Inclusion Criteria**

All age groups of women from rural areas as well as urban areas of Dakshina Kannada treated surgically by Modified Radical Mastectomy (MRM) in a tertiary care hospital diagnosed by histology/Fine Needle Aspiration Cytology/mammography/ultrasound were included in the study.

**Exclusion Criteria**

Paget’s disease, inflammatory breast cancer, male breast cancer etc were excluded because they are rare and their pathophysiology, aetiological factors, prognosis and management varies and different from this group. All breast lump clinically suspicious of breast cancer but histologically benign in nature were excluded.

**Sample Size**

A total of 109 patients fulfilled the inclusion criteria and their data regarding age, risk factors like marital status and religion along with histological type, tumor grade and stage at diagnosis were retrieved.

A semi structured, pretested proforma was used in data collection. Variables included are name, age, address, clinical presentation, diagnostic tool, TNM staging, grade, E/P/H sensitivity

**Statistical Analysis**

Data were entered and analysed by frequency, percentage and chi-square test.

**RESULTS**

A total of 109 patients were treated for infiltrative ductal carcinoma. Among them 76(70%) were from rural and 33 (30%) from urban areas. Age group of presentation among rural women was 51-60 years and among urban women age group was 41-60 years. Majority of them married. \(p\) value: 0.026 (significant because \(p\) value is < 0.05). Table 1. Distribution of cases religion wise is shown in table 2 with \(P\) value=0.94 (not significant). Most of them were Infiltrating ductal carcinoma and were of grade 2 with \(P\) value=0.815(not significant). Table 3. Majority of rural women were in stage 11B and urban women were in 11A. Table 4.

**DISCUSSION**

Breast cancer is one of the dreaded diseases which is on the rise in both India and western countries. It is the second most common malignancy among rural women of India. The majority of patients in our study were from rural areas (n=76) and remaining
from urban (n=33) which was similar to the study by Shaqul Qamar et al and Anita Khokhar. This is mainly due to change in lifestyle modification adapted by most of the rural women. However data from some other parts of India also showed that majority of the patients were usually from rural areas. The burden of breast cancer will continue to grow not only in terms of absolute number but also in terms of incidence.

Age is one of the most important risk factor for breast cancer worldwide. As the age advances, risk of breast cancer also increases. In our study among rural women mean age group of presentation was 51-60 years with an average of 57 years. And among urban women the peak age group was 41-60 years with an average of 53 years. Majority of them were postmenopausal. It compared favourably with the study in Kermanshah, Iran wherein the mean age at which breast cancer was first diagnosed was 46.5±11.6. Similarly in studies conducted in Kashmir and coastal Karnataka the presenting age of cancer ranged from 27-73 years with a mean of 46.6+/10.2 years and the mean age of 45 years respectively. The average age of occurrence of the breast cancer in India reveals that the disease occurs a decade earlier, as compared to western countries. The reason for this is yet to be ascertained.

Parity is another important risk factor as the risk of breast cancer decreases with increase in parity. Our study showed breast cancer cases were highest among Hindus followed by Christians and Muslims. Among the Hindus, 54% were from rural and 51.5% from urban areas, among Christians 39.5% were from rural and 42.5% from urban followed by Muslims with least percentage of 6.6% among rural and 6.1% among urban. This is in accordance with the studies done in Nagpur by Meshram et al, which showed Hindu patients were 83.8%, Muslim 14.3% and Christian 1.9%.

Whereas some studies done in Chennai and south India incidence rates were high in Christians followed by Hindus and Muslims. The higher the parity the lesser was the occurrence of breast malignancy. In Mumbai, Breast cancer incidence rates are highest among parsis and Christians and lower among Jains and Buddhists. The possible reason for highest breast cancer incidence in these cases is westernized life style, consanguineous marriage and childbirth. In our study too Muslims showed least incidence because of multiparity.

The other important risk factor observed in our study was the marital status. Among rural population all (100%) (with the p-value of 0.026) of the women were married whereas among urban 91% of women were married. This indicates the increasing incidence of breast cancer among married women. Similar result was seen in a study done in Taleghani University, Iran where in 4% were single and 96% were married. This was also observed in studies conducted by shaqul et al., shahriari et al., and Fakhro et al, where majority were married. It has also been observed that breast cancer is more frequent among married women without children than among married women with children.

The most common stage at presentation in our study was stage IB among rural women and IA among urban women. These findings are similar to the other study by Anderson et al., where Tumor grade one (I) was 8.7%, grade two (II) was 70.3% and grade three (III) in 21%. The study conducted by Ikpat et al, Nair et al, Fakhro et al, Ibrahim et al, validated the point that stage I had the highest prevalence.

Survival analysis by clinical stage showed an 87.5% cumulative survival rate after 5 years for stage I, 74.48% for stage II, 73.46% for stage I, 11.48% for stage IV. These findings are also similar to other studies which identified clinical stage at diagnosis as an important determinant of survival.

In our study, the most common histological type of breast cancer was Infiltrating Ductal Carcinoma (NOS) which comprised of 92% among rural women and 84%

### Table 4: Stage of breast cancer patients

<table>
<thead>
<tr>
<th>STAGING</th>
<th>TNM GRADE</th>
<th>RURAL</th>
<th>URBAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>T1N0M0</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>IIA</td>
<td>T1N1M0</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>II</td>
<td>T2N0M0</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>IIB</td>
<td>T2N1M0</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>III</td>
<td>T3N0M0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>IIIA</td>
<td>T1N2M0</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>IIIB</td>
<td>T2N2M0</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>T3N1M0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>T3N2M0</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>IIB</td>
<td>T4N1M0</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>T4N2M0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>MAJORITY</td>
<td>IIB(T2N1M0)</td>
<td>II(A(T2N0M0)</td>
<td></td>
</tr>
<tr>
<td>MINORITY</td>
<td>IIIA(T3N1M0)</td>
<td>III</td>
<td></td>
</tr>
</tbody>
</table>
among urban population. Similar histological type was observed in the study conducted in Iran. (15)

Also study conducted by Leonard et al, showed that in histopathological analysis of hereditary breast cancer majority were IDC (NOS). (21)

Although breast cancer can be diagnosed at an earlier stage by self-breast examination our data is alarming in terms of the advanced stage since prognosis depends on the stage of the tumor.

Our study did not reveal any geographic predisposition or a significant family history as risk factor to breast cancer.

CONCLUSION

The study suggests that breast cancer patients present late in the progression of the disease beyond stage 1 and hence there is a need for improved screening techniques among rural women of Dakshina Kannada. Control of breast cancer depends on increase in public awareness of the disease especially among the high risk groups. Breast cancer awareness programmes employed must be tailored with importance to breast self-awareness, which includes education about risk factors for breast cancer and what to do if a breast abnormality is detected. Women should be encouraged to perform breast self-examination and get regular mammograms and breast examinations by doctor or nurse as they are the better screening tests. Health awareness campaign should be progressive with better accessibility to enable all women to gain the best possible treatment at the earliest for improved prognosis.

REFERENCES


