## Original Research Article

# Clinical presentations of carcinoma breast in rural population of North India: a prospective observational study

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**ABSTRACT**

**Background:** There is an ever increasing incidence in cases of carcinoma breast in developing countries, however no definitive cause is found. Since it presents as painless lump, patients neglect the disease and come to hospital often in late stages. This study was planned to investigate the causes for late presentation of the patients with carcinoma breast in North Indian population.

**Methods:** This is a prospective observational study; it included fifty cases of carcinoma breast proven by FNAC/Trucut biopsy. All these cases were admitted in the department of general surgery and thoroughly examined and investigated. The details of investigations, management, morbidity & mortality were noted down & results calculated with appropriate statistical analysis.

**Results:** Most of the female patients were in the age group of 31-60 years. Maximum patients presented with breast lumps, but most of them had lump more than 5 cm (T3) in size with spread to axillary lymph nodes N1 or N2. Surgery in the form of Modified Radical Mastectomy (MRM), adjuvant & neo-adjuvant Chemotherapy as per the stage of the disease and hormonal therapy in the form of Tamoxifen was given.

**Conclusions:** Poor treatment compliance in the form of irregularity to turn up for chemotherapy cycles has resulted in more number of mastectomies. Numbers of patients lost to follow up were more due to unaffordability of the cost incurred and lack of awareness. True mortality rate and recurrence rate could not be commented upon as a longer period of follow up was required.

**Keywords:** Carcinoma breast, Mastectomy, Breast lump, Neo adjuvant chemotherapy

## INTRODUCTION

Carcinoma of the breast is one of the commonest cancers in women in most parts of the world and there is a marked geographical variation in the incidence of carcinoma breast in different countries. There is an ever increasing incidence in cases of carcinoma breast in developing countries, however no definitive cause is found, and other reasons may be due to the awareness and increase in the aging population.[1,2] In India, Breast cancer is second most common, malignancy among women next to carcinoma cervix. Since it presents as a painless lump, patients neglect the disease and come to hospital often late. It is one of the most common carcinoma occurring in female in 3rd and 4th decades, it is a devastating illness both physically and mentally.[3,4] The factors contributing to this delayed presentation in developing countries include poverty, lack of awareness about the disease and local customs avoiding exposure of women even to doctors. There is a lack of organized breast screening

programme in most of the developing countries and a poor excess to tertiary care hospitals add to the burden.

The first step in evaluation of a breast lump is by Triple assessment, which includes Clinical examination, Radiological assessment by Ultrasonography or Mammography, and Pathological evaluation by (FNAC) Fine needle aspiration cytology or Trucut biopsy. Carcinoma of breast is a potentially curable disease when treated at an early stage but once it involves regional lymph nodes and beyond, complete cure becomes difficult or impossible. The social set up in most of the low-resourced areas in developing countries does not consider women as useful members of the family and so they are not given importance when they become ill. Being affected by a disease like breast cancer, a woman acquires a social stigma and suffers a lot of psychological trauma as an added insult to injury. A large number of women carry a breast lump for a long time and do not seek medical advice till the disease is advanced.[5]

We encountered many cases of carcinoma breast in the recent past and we observed that most of the cases presented quite late. Hence this study was planned to see the patterns of presentation of breast cancer with emphasis on various factors responsible for delayed presentation in this part of the country.

## METHODS

This study was carried out in the Department of General Surgery in Maharishi Markandeshwar Institute of Medical Sciences & Research, Mullana Ambala, Haryana, a tertiary care rural hospital situated in North India. This is a prospective observational study which included 50 cases of carcinoma breast admitted in the surgical wards.

### Study design

From October 2012 to September 2015, all the patients with breast lump were admitted; detailed history and examination findings were recorded. These patients were investigated by triple assessment- Clinical examination, radiology (USG/Mammography) and histopathologically (FNAC/Trucut biopsy) of the breast lump. Histopathologically proven 50 cases of carcinoma breast were included in the study.

### Inclusion criteria

All female patients with histopathologically proven carcinoma breast were included in the study.

### Exclusion criteria

All the other non-malignant cases of breast lump were excluded.

All the clinical parameters of presentation like size of lump, ulceration, fungation, nipple discharge, inversion, axillary swelling, peau d' orange, fixity to skin and deeper structures (T) were noted. Status of the axillary lymph nodes ipsilateral, contralateral, medial, central apical, posterior and lateral, number, size and fixity (N). Metastasis (M) to lungs, bone, liver, peritoneum, brain, ovary and opposite breast etc, were recorded in the performa. On the basis of clinical parameters and investigation, (Chest X-ray, USG, Bone scan etc) disease was classified as per Tumour (T), Node (N) and Metastasis (M) classification and was staged from stage I-IV.

Treatment was given according to the stage of the disease ranging from surgery (lumpectomy, simple mastectomy, modified radical mastectomy), chemotherapy (neo adjuvant or adjuvant), radiotherapy and hormonal therapy. Findings were analysed by appropriate statistical tests and statistical significance was determined. Informed written consent was taken from all the patients included in the study.

## RESULTS

Figure 1 shows age wise distribution of patients of carcinoma breast in which maximum 25 (50%) cases were in the age group of 46 to 60 years followed by 20 (40%) cases in the age group of 31 to 45 years, 4 (8%) cases in the age group of <30 years and only 1 (2%) case was in the age group of >60 years.
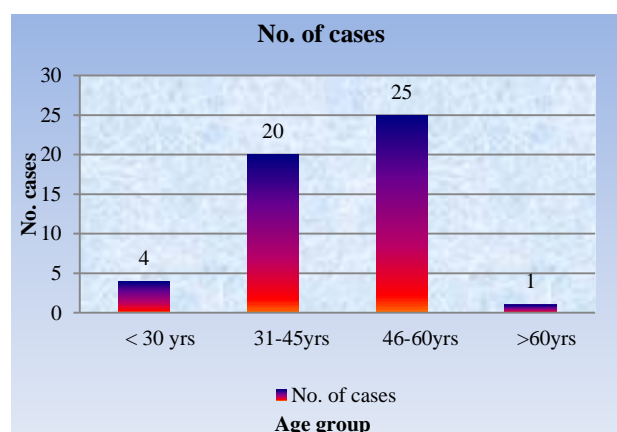


**Figure 1: Age wise distribution of patients of carcinoma breast.**

Figure 2 shows distribution of cases according to chief complaints. In 45 (90%) cases lump in the breast was the most common complaint with majority of 22 (44%) cases in the age group of 46- 60 years followed by 19 (38%) cases in the age group of 31-45 years, 3 (6%) cases in the age group of <30 years and 1 (2%) case was in the age group of >60 years. 12 (24%) cases presented with ulceration or fungation in which majority 6 (12%) cases were in the age group of 46-60 years, followed by 3 (6%) cases in the age group of <30 years and 3 (6%) cases in

the age group of 31-45 years. 7 (14%) cases presented with nipple discharge in age group of 46-60 years. 6 (12%) cases presented with inverted nipple in which majority of 3 (6%) cases were in the age group of 31-45 years followed by 2 (4%) cases in the age group of 46-60 years and 1 (2%) case was seen in >60 years of age group. 1 (2%) case presented with axillary mass which was in the age group of 46-60 years. 3 (6%) cases presented with metastasis (spine) out of which 2 (4%) were in the age group 31-45 years followed by 1 (2%) case of metastasis to lungs was seen in 46-60 years of age group.
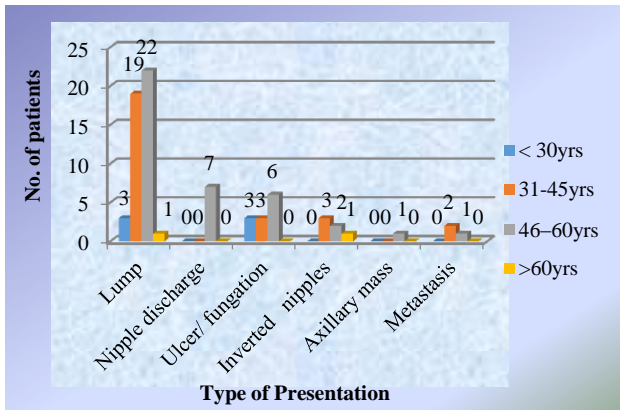


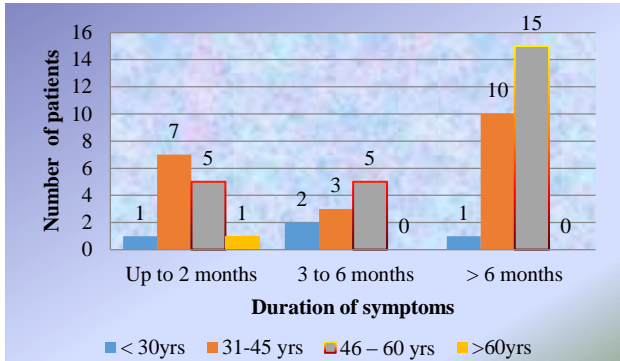**Figure 2: Distribution of cases according to chief complaints.**



**Figure 3: Distribution of patients according to duration of symptoms.**

Figure 3 shows distribution of patients according to duration of symptoms. It was found that maximum number of patients 26 (52%) presented after 6 months in which 15 (30%) cases were in the age group of 46-60 years followed by 10 (20%) cases in 31-45 years and 1 (2%) case was of <30 years of age. 14 (28%) cases presented with in <2 months' duration, in which 7 (14%) cases were in the age group of 31-45 years followed by 5 (10%) cases in the age group of 46-60 years and 1 (2%) case found in both age group of <30 years and >60 years. 10 (20%) cases presented with in 3-6 months in which 5 (10%) cases were in 46-60 years of age group followed by 3 (6%) cases in 31-45 years and 2 (4%) cases in <30 years of age group.

Out of 50 cases, 26 (52%) were postmenopausal and 24(48%) cases were premenopausal. Most of the females were multiparous, all the parous women had breast fed their children. Only 1 (2%) was nulliparous and was <30 years. Out of 50 cases 20 (40%) cases had Ultrasonography of the breast and 8 (16%) cases had Mammography done. All the 50 (100%) cases had FNAC/Trucut biopsy for histopathological confirmation.
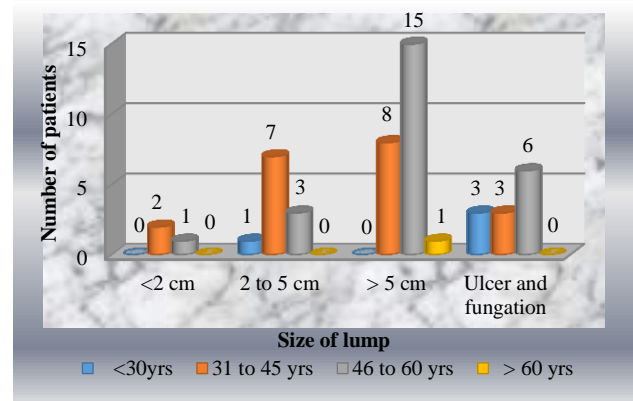


**Figure 4: Distribution of patients according to size of lump.**

Figure 4 shows distribution of patients according to size of lump in which majority of cases 24 (48%) cases presented with size of the lump >5 cm (T3) out of which 15 (30%) were in the age group of 46-60 years followed by 8 (16%) cases in 31-45 years of age group. Only 1 (2%) case was in >60 years of age. 11 (22%) cases presented with lump size between 2-5 cm (T2) in which 7 (14%) cases were in the age group of 31-45 years followed by 3 (6%) in 46-60 years of age group. Only 1 (2%) case was in the <30 years of age group. Only 3(6%) cases presented with lump size <2 cm (T1) out of which 2 (4%) cases were in the age group of 31-45 years and 1 (2%) case was in 46-60 years of age group. Total 12 (24%) presented with ulceration or fungation out of which 6 (12%) cases were in the age group of 46-60 years followed by 3 (6%) cases in both the age group of 31-45 years and <30 years.
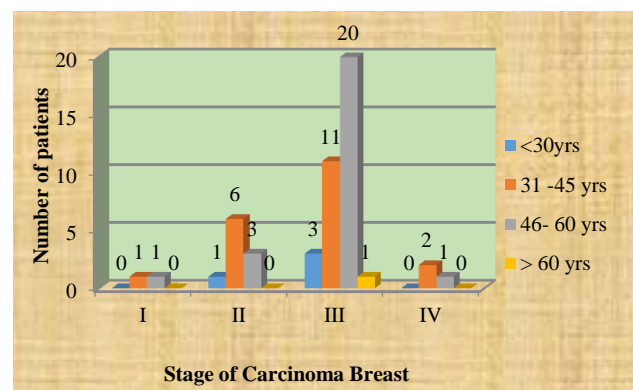


**Figure 5: Distribution of patients according to clinical stage of the disease.**

Figure 5 shows distribution of patients according to clinical stage of the disease. Majority of cases i.e. 35 (70%) presented in stage III out of which 20 (40%) cases were in the age group of 46-60 years followed by 11 (22%) cases in 31-45 years , 3(6%) cases in <30 years of age and only 1 (2%) case was of >60 years. 10 (20%) cases presented in stage II out of which 6 (12%) cases were in the age group of 31-45 years followed by 3 (6%) cases in 46-60 years. Only 1 (2%) case was <30 years of age. 3 (6%) cases presented with metastasis (stage IV) out of which 1 (2%) case was in the age group of 31-45 years and 1 (2%) case in 45-60 years of age group. Only 2 (4%) cases presented in stage I out of which 1 (2%) case was in the age group of 31-45 years and 1 (2%) case in the age group of 46-60 years.
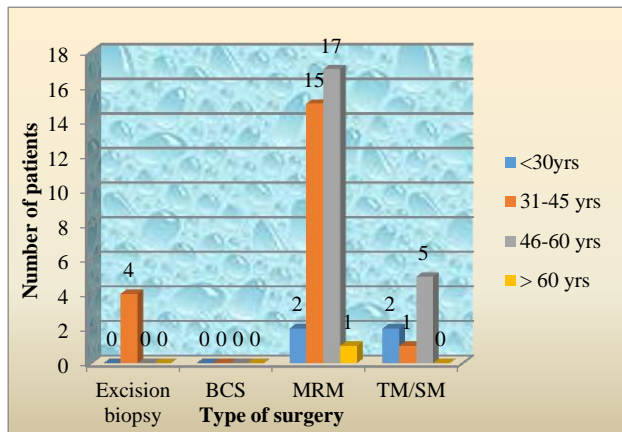


**Figure 6: Distribution of patients according to treatment given.**
*BCS- Breast Conservative Surgery, MRM- Modified Radical Mastectomy, SM- Simple Mastectomy, TM- Toilet Mastectomy

Figure 6 shows distribution of patients according to the treatment given. Majority of the patients underwent modified radical mastectomy (MRM) i.e. 35 (70%) in which 17 (34%) cases were in the age group of 46-60 years followed by 15 (30%) cases in the age group of 31-45 years, 2 (4%) cases in age group of < 30 years and 1 (2%) case was >60 years of age. 6 (12%) cases underwent toilet mastectomy (TM) in which 4 (8%) cases were in the age group 46-60 years of age group followed by 2 (4%) cases < 30 years of age group and only 1 (2%) case was in 31-45 years of age group. 4 (8%) cases underwent excision biopsy which were in the age group of 31-45 years followed by MRM after confirmation of histopathology report. 1 (2%) case underwent simple mastectomy (SM) which was in the age group of 46-60 years. Simple mastectomy was done as the FNAC report was suggestive of Squamous cell Carcinoma (SCC) without involvement of the axillary lymph nodes, which was later confirmed on HPE as moderately differentiated SCC. Breast conservation surgery was not done in any of the cases.
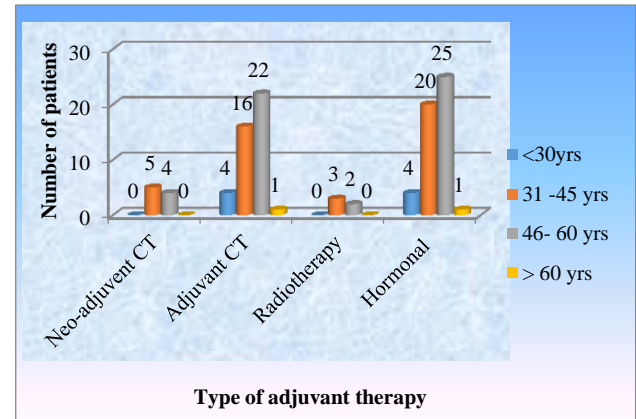


**Figure 7: Distribution of patients according to adjuvant therapies.**

Figure 7 shows distribution of patients according to adjuvant therapies given, in which most of the cases received hormonal therapy out of which 25 (50%) cases were in 46-60 years of age group followed by 20 (40%) cases in 31-45 years, followed by 4 (8%) cases in <30 years of age group and only 1 (2%) case was in >60 years of age group. 43 (86%) cases received adjuvant chemotherapy in which 22 (44%) cases were in 46-60 years of age group, 16 (32%) cases were in 31-45 years of age group, 4 (8%) cases were in <30 years of age group and only 1 (2%) case was of >60 years. 9 (18%) cases received Neo adjuvant chemotherapy in which 5 (10%) cases were in the age group of 31-45 years and 4 (8%) cases were in the age group of 46-60 years. Only 5 (10%) cases received radiotherapy in which 3 (6%) cases were in 31-45 years of age and 2 (4%) cases were in 46-60 years of age group.
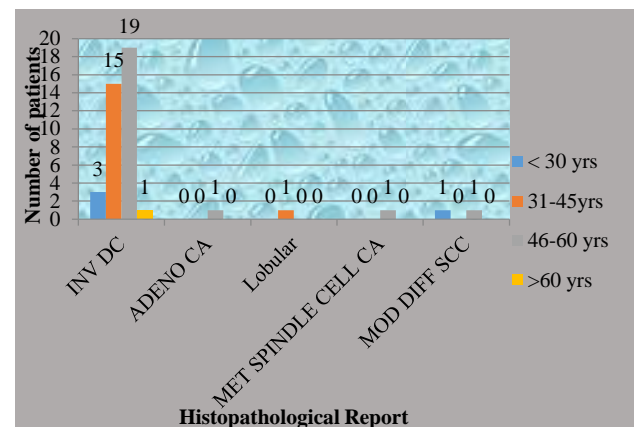


**Figure 8: Distribution of patients according to histopathological type.**
*INV DC- Invasive ductal carcinoma, MOD DIFF SCC-Moderately differentiated squamous cell carcinoma, CA-Carcinoma.

Figure 8 shows distribution of patients according to the histopathological type in which majority of cases were invasive ductal carcinoma 38 (76%) cases out of which 19 (34%) cases were in 46-60 years of age group, 15 (30%) cases in 31-45 years of age group, 3 (6%) cases in <30 years of age group and 1 (2%) case was in > 60 years of age group. 2 (4%) cases were of moderately differentiated squamous cell carcinoma in which 1 (2%) in the age group of <30 years and 1 (2%) in 46-60 years of age group. There was 1 (2%) case of lobular carcinoma which was in 31-45 years of age group and only 1 (2%) case of metastatic spindle cell carcinoma which was in 46-60 years of age group. Out of 2 (4%) cases of moderately differentiated squamous cell carcinoma, 1 (2%) case was in 46-60 years of age group and 1 (2%) case was in <30 years of age group. 2 (4%) cases died during study period and 8 (16%) cases were lost to follow up.

## DISCUSSION

Breast carcinoma is the most frequent cancer in women globally and represents the second leading cause of death among women after lung cancer.[6,7] The incidence of carcinoma breast has increased over the last several decades.[8-10] The greatest increase has been seen in Asian countries.[11] India is going through epidemiological transition. It is reported that the incidence of carcinoma breast is rising rapidly in India as a result of changes in reproductive risk factors, dietary habits and increasing life expectancy.[12] In this study the mean age of patients with carcinoma breast was 47.5 years which is comparable with other studies.[13] The youngest patient was 20 years and oldest was 62 years. The mean age of carcinoma breast in this study was lower as compared to few other studies in the west, according to which mean age was around 60 years. In India premenopausal patients constitute about 50% of all patients, hence it is expected that in coming decades, Asian countries and more so India would account for majority of new breast cancer patients diagnosed globally.[14]

In the present study it was found that about 26 (52%) patients with lump in the breast presented with lump size >5 cm suggestive of advanced breast cancer. Also 52% patients presented with symptoms of >6 months' duration. However only 10 (20%) patients presented with symptoms of 3-6 months and 14 (28%) patients with symptoms <2 months. In similar studies the duration of symptoms were more than 6 months in (33%) patients, 3-6 months in (44%) and less than 2 months in (17%) patients.[15] Late presentation and cases of locally advanced breast cancer have also been found in few other studies.[16,17] This can be attributed to illiteracy, lack of awareness, low socioeconomic status thereby leading to ignorance and late presentation. Moreover, lack of medical facilities especially in rural areas of North India contributes for the late presentation. In the present study only 6 (12%) cases were <35 years of age and only 1 patient was younger than 20 years; however, these cases

also presented with lump of about >5 cm or more. Younger age group has been associated with larger tumour size, higher number of metastatic lymph node, poor grade, low rate of hormone receptor status and poorer overall survival.[18] Although breast cancer can be detected at an earlier stage by simple breast examination but in most studies carcinoma breast is diagnosed in advanced stages i.e. stage III and IV. In developing countries lack of public awareness about breast cancer means that patients ignore their symptoms till the very late stage.

As per the guidelines of triple assessment for earlier detection of breast cancer, screening by mammography is an important step. Although it is established that screening by mammography can substantially reduce the mortality of breast cancer specially in women over the age 50 years, breast cancer screening programme involving imaging techniques are expensive and for this, reasons cannot be adopted in developing countries as a routine public health measure. In our study 8 (16%) patients underwent mammography, there is no screening programme developed by the institute for early detection of carcinoma breast. Similarly, 20 (40%) patients were subjected to USG of the breast and most of them were in accordance of carcinoma breast. Our study found that 35 (70%) patients were in stage III i.e. locally advanced carcinoma breast, followed by 10 (20%) in stage II, 3 (6%) in stage IV and only 2 (4%) cases in stage I. In similar study done by Gang et al 2007 the stage wise distribution was (25%, 25%, 31% & 19%) for stage I, II, III and IV respectively.[15] Similarly Nasser et al in 2012 found the stage wise distribution as (13.4%, 38.3%, 40% and 6.6%) respectively.[19]

Majority of patients with breast cancer in developing countries are managed by general surgeons; surgical sub specialties dealing with breast cancer such as surgical oncology are still evolving. In our study 35 (70%) patients had modified radical mastectomy suggesting that these were the cases of operable breast cancer. Few cases 8 (16%) had toilet mastectomy suggesting that the cases were of advanced breast cancer. There was neither a radiotherapy department present nor a surgical oncologist available during the study period. Neo-adjuvant chemotherapy followed by surgery was given in 9 (18%) patients and 43 (86%) patients received adjuvant chemotherapy. This chemotherapy was given by medical oncologist as per the recent guidelines. Only 5 (10%) patients received radiotherapy, as most of the patients did not want to go to other higher centres for treatment (another centre where radiotherapy facilities were available is about 80 km away). In India for a population of about 1100 million, 1155 radiotherapy machines are required to cater to all cancer patients but at present there are only about 400 tele therapy machines, which are located in centres at large cities only.

Inappropriate management of breast cancer is common at the community level more so in rural areas where

indiscriminate lumpectomy, incomplete mastectomy and suboptimal axillary clearance has been noted. In a study from major north Indian treating hospital almost 75% of patients referred for the management of operable breast cancer had excision or incisional biopsy done. At other centres the picture is more or less the same and about 40% patients with early breast cancer or locally advanced breast cancers present after some sort of surgical procedure which was either not intended to be a breast cancer treatment procedure or was inadequate.[20] In the present study most common histo pathological type of breast cancer was invasive ductal carcinoma 38 (76%), 1 (2%) lobular carcinoma, 1 (2%) metaplastic spindle cell carcinoma, 1 (2%) adenocarcinoma and 2 (4%) were of squamous cell carcinoma. When compared with similar studies the results were found to be similar.[19-21]

In the present study there were no cases of breast conservative surgery as none gave the consent for it moreover few patients actually presented in stage I or II, moreover no one opted for reconstructive surgery thereafter due to the added expense. Most of the cases were in the advanced stage which could succumb to the disease in the following 2–5 years despite of receiving other therapies. In the study period of 2 years out of 50 patients about 8 (16%) patients were lost to follow up or were not traceable, 2 (4%) patients died however a longer period of follow up was required to assess the true mortality rate. Numbers of patients lost to follow up were more due to unaffordability of the cost incurred.

To conclude we suggest few steps to be taken to decrease the number of patients presenting late to the hospitals. For detection of Breast Cancers in earlier stages, Breast self-examination must be stressed upon and should be taught to female population more than 30 years as a protocol. Screening programmes in the form of mammography should be carried out by the hospital along with government agencies like primary health centres and rural hospitals. Once a case of carcinoma breast is detected in the hospital a dedicated team of health worker must counsel the patients and family to complete the treatment and follow up. Special camps dedicated to breast cancer must be held in villages, grampanchayat and primary health centres. People must be educated regarding the various presentation of breast cancer and different methods of early detection by banners, posters and street plays. Government should help the cases of breast cancer through various schemes, so that the burden of treatment is shared. Hospital should start dedicated "Breast Clinics", "Radiotherapy Department", and start a team effort to deal with these cases including surgical/medical oncologist, Radiotherapist, trained nurses, counsellors and a rehabilitation team.

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