

Analyzing the Manifold Causes Governing the Delayed Attainment of Definitive Treatment in Primary Breast Carcinoma Patients

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Abstract

Original Research Article

Identification of obstacles and causes for delayed presentation of breast cancer patients is of paramount importance to reduce morbidity as well as mortality. The detailed interview and the statistical analyses lead us to point towards a stupendous lack of awareness encompassing the spectrum of Breast Cancer as a disease. Inflicted patients are failing to come forward as they are bound by several reasons provoking fear (OR – 0.07). Patients of low socioeconomic status seem to succumb to a whirlpool of alternative treatment options, unawareness and obscure higher care centres (OR – 0.19). Alternative treatment related delay (Homeopathy and/or Ayurveda) is significant (p value < 0.02) but can be controlled if focus is put on early, meticulous and urgent referrals from all primary care health care providers.

Keywords: Breast cancer, Patient delay, Delayed diagnosis, India.

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INTRODUCTION

Carcinoma of the breast accounts for the highest mortality among all cancer affected women across urban India [1]. Irrespective of the low prevalence, the progressive rise in incidence, increasing occurrence in younger age groups and significantly worse prognosis with late presentation are reasons that deem aggressive identification and prompt treatment initiation in susceptible patients [1,2].

Impeding stage progression with timely detection and management offers several areas of enhanced control; providing increased options to undertake associated mortality whilst improving quality of life and patient satisfaction. Lack of awareness as well as shallow concern towards healthcare are the chief reasons that lead to delayed presentation of patients in India [1]. Studies have demonstrated many possible determinants such as advanced age cohorts, lower socio-economic status, remote access to tertiary care centres and rural populations among others which affect the obtaining of health care [3].

Identification of such obstacles is paramount as advanced stage presentation leads to higher mortality and morbidity which further endorses patient dissatisfaction and non-adherence. In our study, we aim to analyse the determinants of this delay encompassing both patient and physician governed reasons. Insight

gathered from our study shall impart light on controlling these concerns thus allowing better control of Breast Carcinoma in developing countries.

MATERIALS AND METHODS

This was an institution-based, prospective study conducted in Department of Surgery, Medical College, Kolkata, India from July 2016 to January 2017 (7 months). Informed consent was taken from all the patients. Sample size was 60 cases.

Premeditated questionnaire and proformas were used to identify variables associated with the delay. Medical records of in-patients were assessed to identify physician related delay, referral delay, alternative diagnosis, tumor type and grade, treatment offered along with interim investigations, non-adherence to treatment and loss to follow up. All primary breast cancer patients attending or admitted for definitive treatment intervention in the Department of General Surgery, MCH Kolkata were included in the study.

Outcome Parameters

- Delay in months (Range <1 month to >6 months)

For each patient/patient cohort

- Stage 1 and Stage 2- Early Breast Carcinoma

- Stage 3 and Stage 4- Advanced Breast Carcinoma

Statistical Methods

- Linear and Logistic regression to define association
- Uni-variate and Multivariate linear regression model

RESULTS

Delay in presentation related to Age

Mean ages at which patients develop symptoms (lump, engorgement, mastalgia, ulceration,

nipple discharge) had a range of 35-55 years. Patients of a younger age cohort presented earlier than patients aged above 40 years. Contrarily, patients in the senior age groups, i.e. > 50 years, presented as soon as they realized their symptoms. The mean delay was however less than a month’s duration when the “Delay” was calculated from the date of first symptomatic to the date of presentation to a health care provider. Thus, the average patient was a middle-aged woman who consulted a physician within a month of realizing abnormality.

Table-1: Delayed Presentation according to age

	<35 yrs	35-44 yrs	45-54 yrs	55-64 yrs	>65 yrs	Percentage	Total
< 1 month	5	8	7	4	2	50%	26
1 – 3 months	1	3	6	1	3	16.07%	14
3 - 6 months	0	3	2	0	0	16.07%	5
> 6 months	2	6	5	1	1	17.85%	15
Total	8	20	20	6	6		60
Percentage	8.92%	35%	37.50%	14.20%	3.57%		

Correlation Co-efficient (R): 0.465

T test t = 0.74

P value (4 degrees of freedom) = 0.5

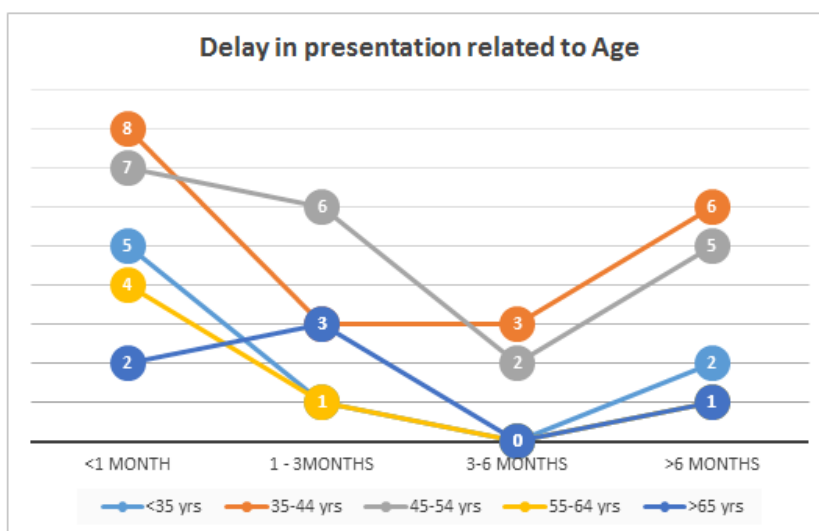


Chart-1: Line diagram showing descriptive statistics of delayed presentation with age

Educational Status and its effect on presentation:

Mean educational status of patients was a primary level of schooling (School Standard I - V) or were home schooled. None were found to be illiterate. The maximum delay was recorded highest amongst women who studied till Secondary school (School Standard VI - X). Well educated working women presented earlier to the doctor than others and did not delay consultation more than 3 months. Mean delay was

observed to be less than a month in acquiring any form of medical advice. The Correlation Co-efficient (R) is 0.0900 between the delay in months in presenting for their 1st consult and each breast cancer patients’ educational status. There appears to be a weak positive correlation between one’s level of education and the extent of haste with which they presented to their preferred physician.

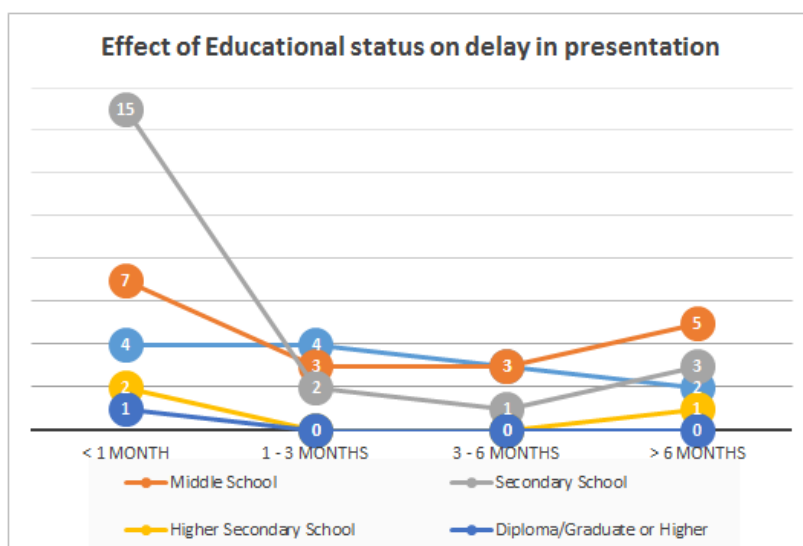


Chart-2: Effect of Educational status delay in presentation

Delay due to Socio-Economic Status Affecting Presentation

It was found that patients of Low socio-economic status (Monthly income below Rs 10000)

were most vulnerable to delayed presentation and subsequently delayed examination and treatment.

Table-2: Delay in Presentation due to low socio-economic status

	Low socio-economic status	Percentage
< 6 months	34	56.66%
> 6 months	10	16.66%

P value – 0.16 OR – 0.19

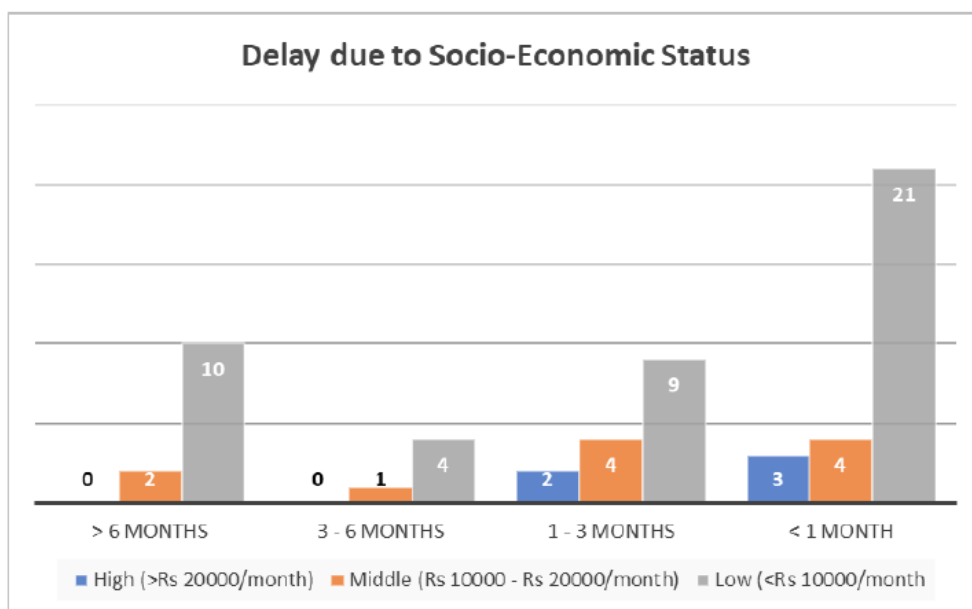


Chart-3: Effect of socio-economic status on delay in presentation

Delay due to Fear from Operative Procedure and Recovery

8.33% of patients were delayed more than 6 months till receiving treatment as they underwent

Homeopathic/Ayurvedic treatments for fear of operative procedure & recovery.

P value (afraid) - 0.06. OR – 0.07

P value (not afraid) - 0.51. OR – 1.05

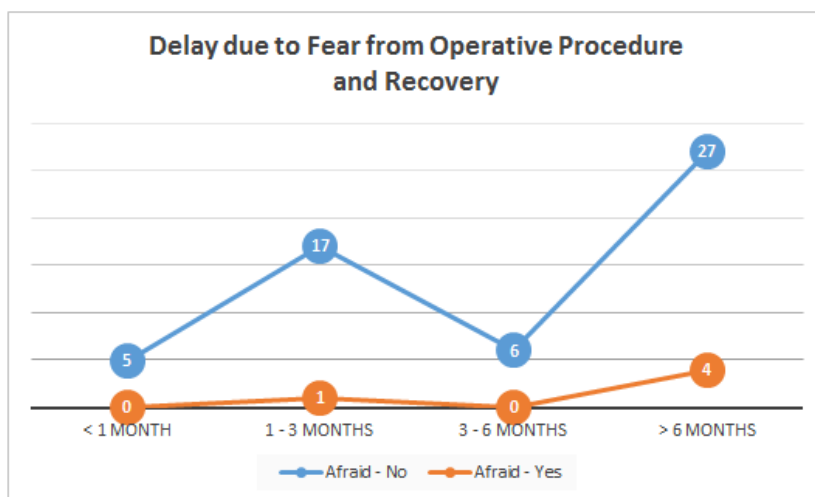


Chart-4: Effect of fear of Operative procedure on delay in presentation

Delay due to Social Stigma and involvement of Private Body Part

Fear stricken patients were most vulnerable to attaining late care. Presence of psychological obstacles devastatingly prolonged time till the first consult as well as receiving the offered definitive treatment (Surgery [8.33%], Chemotherapy, Radiotherapy). Mean delay of

at least 6 months was however observed regardless of these uncertainties. 85.7% of psycho-socially afflicted patients were delayed by a minimum of 6 months and 25% were reprieved by 3 months not less.

P value (affected) - 0.01667. OR= 0.016
 P value (not-affected) - 0.366. OR-0.577

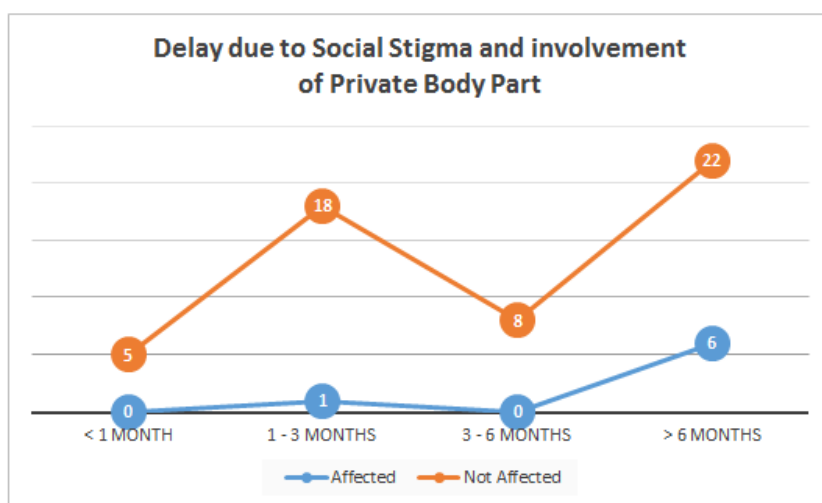


Chart-5: Effect of Social Stigma and fear of involvement of Private Body Part on delay in presentation

Awareness of Breast Cancer

A major concern in early detection of Breast cancer patients is their lack of awareness regarding the disease and its progression. A striking number of

patients (89.4%) were alien to this sickness and its symptoms. The mean delay in arriving at a diagnosis for unaware patients ranged from 6 months to almost a year of postponement.

Table-3: Delay in Presentation depending upon awareness of breast cancer

	Aware	Unaware	Percentage
< 6 months	5	27	53.33%
> 6 months	1	27	45.67%

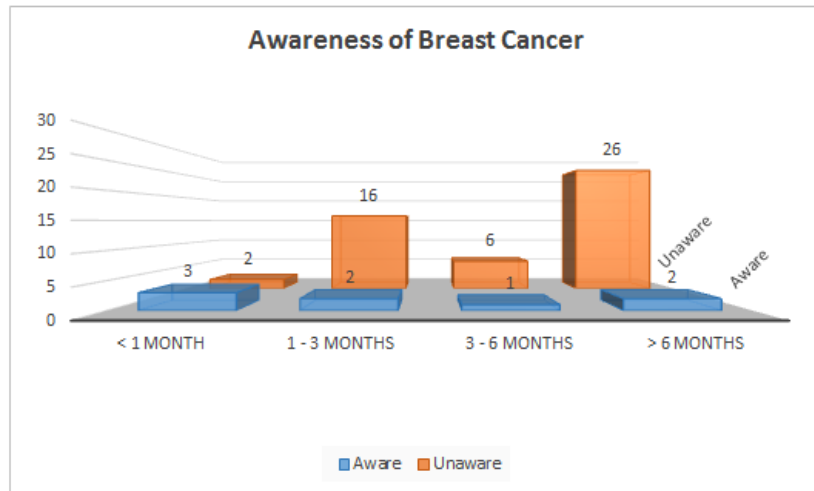


Chart-6: Effect of awareness of breast cancer on delay in presentation.

Alternate Treatment associated Delay

The most significant of all factors appear to be Homeopathic/Other practices' advice and their treatment (60%). The effect of seeking and attaining alternative treatment cares was most devastating on the

over-all delay in establishing diagnosis. Consequently, receiving appropriate treatment was also seriously postponed. Mean delay was calculated at more than 6 months to establishing diagnosis from time of first clinical-care visit.

Table-4: Delay in Presentation depending upon alternate treatment of breast cancer

Delay in definitive treatment	Number of patients delayed
<1 month	0
1 – 2 months	4
3 - 4 months	6
5 - 6 months	5
7 - 8 months	2
9 – 10 months	1
11 – 12 months	1
> 12 months	17

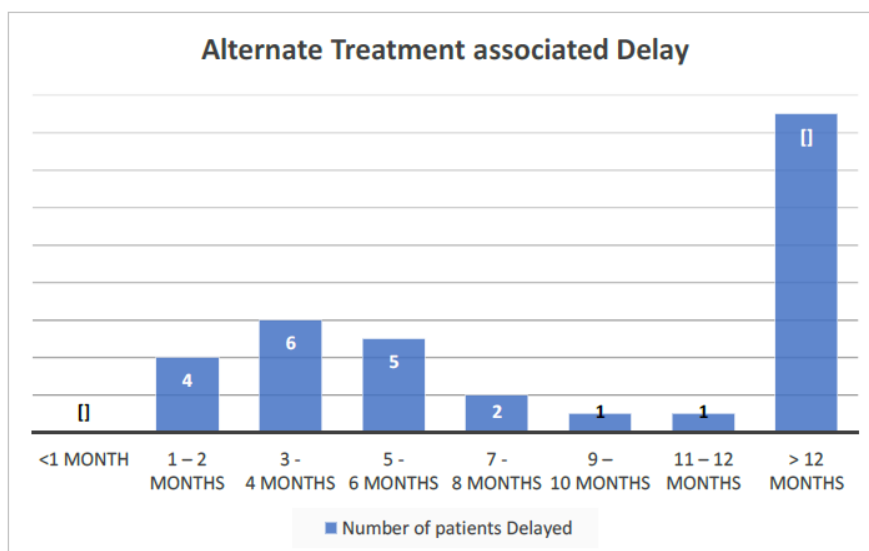


Chart-7: Effect of alternate treatment of breast cancer on delay in presentation

Correlation co-efficient R: 0.7648

T TEST VALUE L = 2.9045

For 8 degrees of freedom, the p-value is >0.01 and <0.02

Delay due to time lost in Referral and Proving Diagnosis

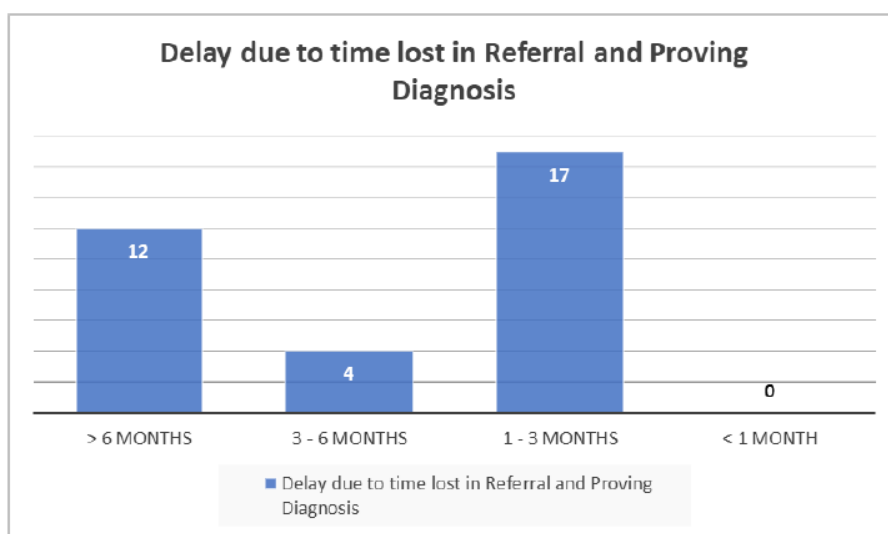


Chart-8: Effect of alternate treatment of breast cancer on delay in presentation

Correlation Coefficient (R): 0.992; T test value t-11.09

P value (4 degrees of freedom) - <0.001; B- 0.89

Standard error (b)- 0.160; 95% Confidence interval: 0.549 - 1.231

Delay due to incorrect diagnosis

Table-5: Delay in Presentation due to incorrect diagnosis

	Incorrect	Correct
< 1 month	0	4
1 – 3 months	3	18
3 - 6 months	2	6
> 6 months	2	25

P value (incorrect diagnosis) - 0.06; OR - 0.07

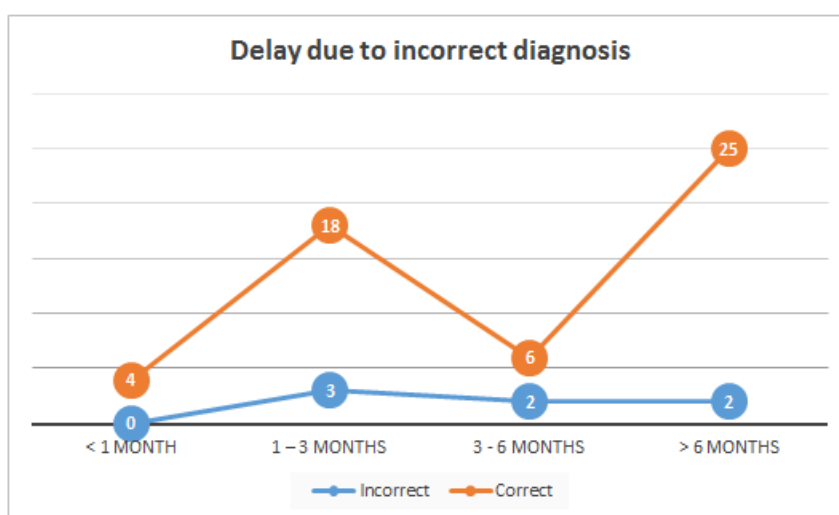


Chart-9: Effect of incorrect diagnosis on delay in presentation

The most striking reasons behind patient related delay were primarily a lack of knowledge or understanding of the disease, its symptoms and progression (89.4%) and a high incidence of attaining alternative treatment options (55%). Avoiding primary visits to surgeons in order to escape operative

treatments (14.28%) was also a major cause in delayed presentation to a higher care facility. Social barriers in a developing country such as India with strong societal burdens and stigma also increase the delay in women coming forward with their complaints and seeking healthcare (17.85%). Previous visits to a hospital or

healthcare provider for co morbidities and/or familial health concerns also show significant decrease in delay.

Physician and Healthcare related causes, categorized as Clinical Diagnostic Delay/Tissue Diagnostic Delay, Definitive Treatment Delay as well as a lack or delay of referral to appropriate Higher Care facilities (Tertiary or Oncological Care centers) prolongs this delay further. Distance and long travel time to such care centers again pose as potential causes to increase the over-all delay.

DISCUSSION

Mean ages at which patients develop symptoms (lump, engorgement, mastalgia, ulceration, and nipple discharge) had a range of 35-55 years. Patients of a younger age cohort presented earlier than patients aged above 40 years. Contrarily, patients in the senior age groups, i.e. > 50 years, presented as soon as they realized their symptoms. In a study by *Gangane et al.* [5] it was found that the range of time lag between appearance of symptoms and first consultation extended from 0 to 150 weeks with a mean of 8 months and Patients aged younger than 40 years experienced lesser delays in seeking medical consultation compared with patients older than 60 years.

In our study, the maximum delay was recorded highest amongst women who studied till Secondary school (School Standard VI - X). Well educated working women presented earlier to the Doctor than others and did not delay consultation more than 3 months. This corresponds well to findings of studies done in India as well as abroad [5-7]. However, in one study it was not found to be significant [8].

It was found that patients of Low socio-economic status (Monthly income below Rs 10000) were most vulnerable to delayed presentation and subsequently delayed examination and treatment (34 patients had delay of > 6 months) and this finding is similar to findings in other studies [7,9]. 8.33% of patients were delayed more than 6 months till receiving treatment as they underwent Homeopathic/Ayurvedic treatments for fear of operative procedure & recovery. In a study by *Odongo et al.* [8] showed that use of alternative care like herbal medicine with a borderline p value of 0.055 partly explained some of the delay seen.

Fear stricken patients were most vulnerable to attaining late care. Mean delay of at least 6 months was however observed regardless of these uncertainties. 85.7% of psycho-socially afflicted patients were delayed by a minimum of 6 months and 25% were relieved by 3 months not less. This has also been seen in some other studies [8,10]. A striking number of patients (89.4%) were alien to this sickness and its symptoms. The mean delay in arriving at a diagnosis for unaware patients ranged from 6 months to almost a year of postponement. The most significant of all factors

appear to be Homeopathic/ Other practices' advice and their treatment (60%). Mean delay was calculated at more than 6 months to establishing diagnosis from time of first clinical-care visit.

CONCLUSION

The detailed interview and the statistical analyses lead us to point towards a stupendous lack of awareness encompassing the spectrum of Breast Cancer as a disease. Inflicted patients are failing to come forward as they are bound by several reasons provoking fear. Afraid of undergoing the ordeal of an operation they know nothing of and then having to succumb to endless follow ups made strenuous and difficult owing to increase distance from home and facility as well as lost time in the hospital stands to be unaffordable for patients of all groups. Low-socioeconomic status patients seem to succumb to a whirlpool of alternative treatment options, unawareness and obscure higher care centers. Patients of high socio-economic status mainly progress to late stages without treatment due to their dependability, unawareness of the symptoms and progression of CA breast, and lack of adequate familial support and confidence.

Physician related delay can be controlled if focus is put on early, meticulous and urgent referrals from all primary care health care providers (Allopathy/ Homeopathy and Ayurveda). The lag time due to confirmation of diagnosis by the definitive investigations should be tried to be kept to a minimum of two weeks' duration.

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