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A Prospective Study on Epidemiology & Risk Factor of Carcinoma Breast

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Abstract
Introduction: *Cancer is a leading cause of death worldwide, accounting for an estimated 9.6 million deaths in 2018. Breast cancer has ranked number one cancer among Indian females with age adjusted rate as high as 25.8 per 100,000 women. This study collects data regarding epidemiological and Risk factor. Epidemiology will give data about where to screen and risk factor will tell us whom to screen.*
Aim: *The study was conducted to assess the epidemiological status and risk factors associated with the cancer breast in rajah muthaih medical college and hospital, chidambaram.*
Methodology: *The current descriptive study was conducted at surgery department at RMMCH, Chidambaram, among 50 histo-pathologically proven Breast cancer patients after obtaining permission from the IHEC. Data were collected using questionnaire. Statistics was analysed using M.S. Excel 2013.*
Result: *Out of 50 breast cancer patients, 2 were men 48 were women. Mean age was 53.12. Patients from rural area were 78%. All women had atleast one risk factor. Percentage of risk factors that prevailed in this study were Early menarche (62%); Nulliparity (16.6%); Reduced breast feeding (75%); Family history (64%); Less exercise or high BMI (86%); OCP usage (50%); post-menopausal (62.5%).*
Conclusion: *This current study gives the epidemiological data among the sample group, but this is highly influenced by the total epidemiological data of hospital. The study assessed the prevalence of the already proven risk factor but no new hypothesis was formulated to find the new risk factors.*
Keywords: *Breast cancer, risk factors, epidemiology, women, pink ribbon.*

Introduction

"There can be life after Breast Cancer but the pre-requisite is Early Detection"
-Ann Jillion

Cancer is a leading cause of death worldwide, accounting for an estimated 9.6 million deaths in 2018. The most common cancers are: Lung (2.09 million cases) & Breast (2.09 million cases)[1]. Breast cancer has ranked number one cancer among Indian females with age adjusted rate as high as 25.8 per 100,000 women and mortality 12.7 per 100,000 women[2]. Breast cancer incidence studied throughout India had showed a huge number of variation (almost 3 to 4 folds) from state to state; maximum incidence being found in states I the north eastern part of India and in major cities such as Mumbai and New Delhi[3]. This increased prevalence needs to be addressed with the huge manpower, medical knowledge and statistical background of the disease. Risk factors of breast cancer can be of modifiable or unmodifiable. Some unavoidable factors are Sex, race and ethnicity, age, family history, inherited genes, early menstruation, and late menopause.

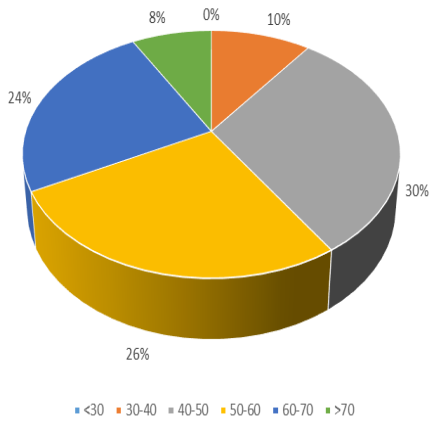
White women have a higher probability of developing breast cancer. Some lifestyle risks that can be controlled include alcohol consumption, obesity, sedentary lifestyle, not having children before age 30, and taking birth control and postmenopausal hormone therapy[4-7]. As Ann jillion said early detection plays major role in secondary prevention, this study steps ahead and tries to collect data regarding the primary prevention (Risk factor analysis). Epidemiology will give data about where to screen and risk factor will tell us whom to screen. Carcinoma breast is a systemic disease even on initial presentation. The heterogeneous nature of the disease necessitates individualized treatment. In spite of major advances in oncology and multimodality approach towards treatment of Carcinoma Breast there is not much decrease in mortality. This study is undertaken to find out the epidemiology and risk factors for Carcinoma Breast in Patients who attended Rajah Muthiah Medical College &Hospital, Department of General Surgery.

Materials and Methods

The current descriptive study was conducted at surgery department at Rajah Muthaih Medical College and Hospital (RMMCH), Chidambaram. The study was done during 2016 to 2018. The study included the 50 histo-pathologically proven Breast cancer patients. Ethical permission was obtained from Institutional Human Ethical Committee before conducting the study. After obtaining informed consent, the study participants were explained about the purpose of the study. Data were collected by the investigator in direct (person – person) interview using pre-designed and pre-tested questionnaire from the patients. The questionnaire contained queries relating to name, age, socio-demographic, medical and lifestyle variables, menstrual history, reproductive history, family history of cancer. Questionnaire was discussed with the participants by the chief investigator. The questionnaire took approximately 10 minutes to complete. Participants were asked to provide their weight and height. The menstrual history and reproductive history were included in the questionnaire. Drug history referring to intake of infertility drugs (oral contraceptive pills, and all hormone replacement Therapies) was also included in the questionnaire. Statistical analysis was done with the help of M.S. Excel 2013.

Results

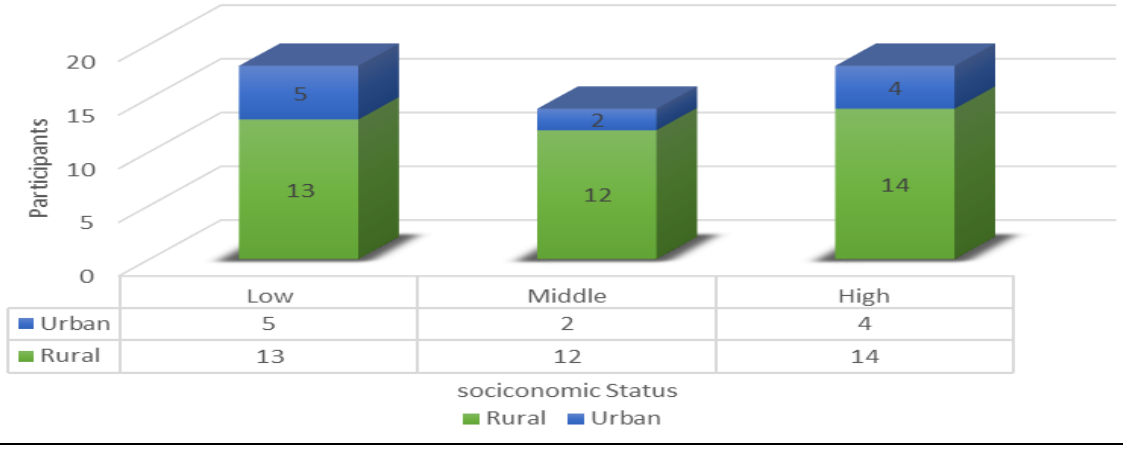
Out of 50 breast cancer patients, 2 were men 48 were women. Mean age of participants were 53.12. In our study the highest incidence (30%) of breast cancer has occurred in the age-group between 40-50 years. [Table/ Fig: 1]



Table/ Fig-1: Age Wise Prevalence of Breast cancer

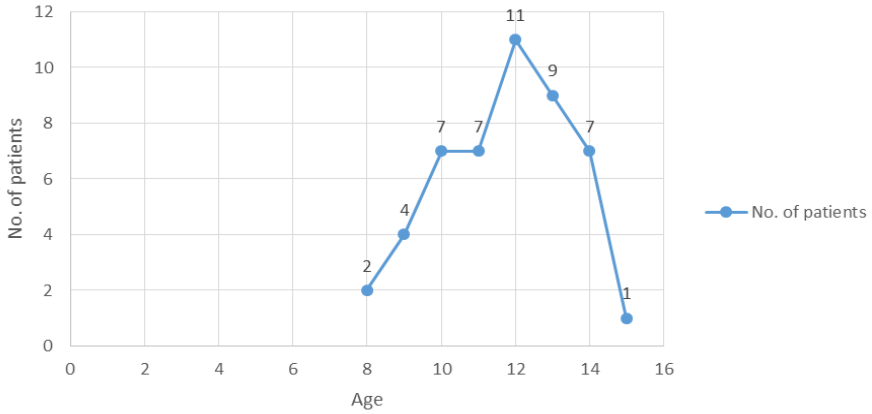
Patients from rural area were 78%. As this institute serves as the referral centre for most of the districts in Eastern Tamilnadu and this institute is located in the midst of many rural areas. There was no significant change in occurrence of breast cancer in socio-economic and demographic status.[Table/ Fig:2].

	Rural	Urban	Total
Low	13	5	18
Middle	12	2	14
High	14	4	18
Total	39	11	50



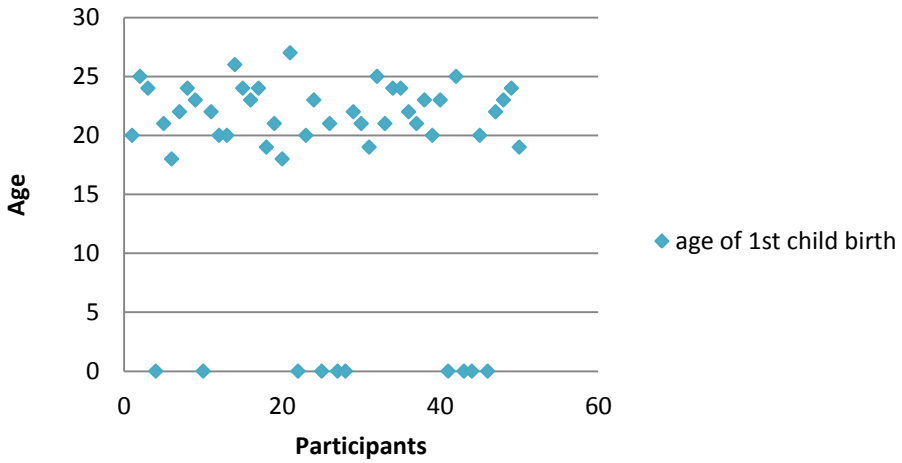
Table/ Fig-2: Socio-Economic Status adjusted with geographic and its correlation with Breast Cancer

All women had at least one or the other well defined risk factors in this study. The risk factors included early menarche, Parity, Age at 1st child birth, Breast feeding, Family history, Less exercise or high BMI, OCP usage, menstrual status. The mean age of menarche retrospectively enquired in ca. Breast patients were averagely it was 12. Early menarche was at 8. Maximum junk of people in this study attained menarche was 12.



Table/Fig- 3: Pattern of breast Cancer and Age of menarche

Among the 48 women, 16.66% were nulliparous; rest gave birth to 1 or 2 children in their reproductive life period with the average age group of 1st child at 20 – 25yrs. None of the mother had their first child after 27 years.



Table/ Fig-4: Age of 1st child birth

In my study patients with BMI 20-25kg/m2 were maximum chunk (44%) and the in people with BMI between 20-30 kg/m2 were 86%. Percentage of post menopausal people was 62.5%. People who breast fed were 75% and all did it for 14 months on an average. 50% of patients have used OCP for some reason including treatment for infertility, abortion and irregular menstruation. 64% of patients had a strong family history of breast cancer/ hormone depended cancer with their first degree relatives.

Table/ Fig-5 : RISK FACTORS

FAMILY HISTORY	**YES**		**NO**	
	N	%	N	%
	18	36	32	64
MENSTRUAL STATUS	**PRE-MENOPAUSAL**		**POST -MENOPAUSAL**	
	N	%	N	%
	18	37.5	30	62.5
BREAST FEEDING	**YES**		**NO**	
	N	%	N	%
	36	75	12	25
OCP USAGE	**YES**		**NO**	
	N	%	N	%
	25	50	25	50

Discussion

Causes of Carcinoma Breast are unknown. However epidemiological data indicates well defined factors that indicate the liability to breast cancer. Such factors are genetic, endocrine and environmental. Risk factors related to breast cancer are described in the various studies have been derived based cohort analysis in the western countries [8]. Most popular risk assessment models for breast cancer are the Gail model and the Claus model. The Gail model was arrived at from the data generated by a case control subset of Breast Cancer Detection and Demonstration Project [9]. In this study almost 63% of our patients with Ca. breast had atleast one of the above mentioned risk factors as similar to 67% in western studies [10.] Thus the data doesn't give us the information about the exact cause for the breast cancer in the rural population in Chidambaram. Moreover the people here very guilt to come out with the duration of breast feeding and age of menarche and other menstrual details. PBCR (Population Based Cancer Registry) states that the urban population has a significant incidence rate when compared to the rural population[11]. But in current study the rural area had more incident rate when compared to urban, but this could be biased by the total rural proportion in the RMMCH. Although the reason for this phenomenon is difficult to ascertain from the data at hand, it may be attributed to selection bias in the sample population. So additional research is required on the influence of environmental factors in the breast cancer causes. The future studies must go with properly matched Controls.

Conclusion

Women must be encouraged to have a healthy lifestyle Vegetarian diet, exercises and lowering BMI must be encouraged. Lactating mothers must be made aware about protective effects of breast feeding for more than 1 year. Future studies could also consider the addition of analysis of mammographic density. As previously mentioned, there is now a burgeoning line of research that considers mammographic density as a risk factor for breast cancer. While the current study was concerned specifically with breast cancer etiology and thus focused on first occurrence of disease, risk factors for disease recurrence in an area of emerging interest. It would be useful for clinicians to have a readily available tool to predict the chances of recurrence, given a particular set of risk factors. There are already immunehisto-

chemical tools to help predict breast cancer recurrence risk, such as Mammostrat. However, it would be interesting to compare such tools to an affordable (perhaps even free) regression based prediction tool that simply utilizes data from a patient's medical history. Breast cancer is a complex disease with many etiological contributors from both nature and nurture. This project is potential step towards the cancer prediction tools. A logical next step would be to extend this research to a sample more South Indian women. Way to accomplish this would be to collaborate with other research groups.

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