Relation of Risk Factors in Carcinoma Breast in A Rural Area

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ABSTRACT

This study comprising of 150 cases was done between June 2014 and November 2015 at Tirunelveli Medical College Hospital, Tirunelveli. The study group consisted of 150 Females.

This study was chosen because   50 – 55 % of women suffer from breast related disorders during their life time & hence pose a significant panic among women.

The objective of the study is to retrospectively analyze & prospectively investigate the breast carcinoma patients to correlate its association with the risk factors, admitted in the Surgical ward.

Different parameters are analysed especially the menstrual & lactational factors. The most common age group affected was from 45- 49 yrs, nulliparity, early menarche, late menopause, elderly primi, obesity, family history are proved to be the risk factors in the study. While grand multi, prolonged lactation are found to be protective. Association with Oral contraceptives, Hormone replacement therapy & pregnancy could not be studied as the duration of study was short & due to lack of cases. Beside clinical examination was done for all the cases & signs and symptoms are assessed. The patients were followed up continuously and the treatment taken was noted

INTRODUCTION

Breast is a structure, which undergoes changes throughout Women's reproductive life. Exposure to estrogen is a risk factor for breast cancer, the relationship between menstrual factors, which are estrogen-related is being studied here. With women nursing fewer children and weaning them earlier, altering hormone flows, adopting Western lifestyles by marrying and bearing children later in life they put themselves at higher risk of contracting breast cancer and hence India faces a potential breast cancer epidemic over the next decade. As India becomes westernized even in the rural part, the incidence rate for breast cancer increases.

Since much of the research on breast cancer risk factors are inconclusive, more research is needed, especially research examining the probability of prolonged exposure to both estrogens and progesterone concurrently, especially the receptor study.

METHODS AND MATERIALS

This is a **CROSS SECTIONAL** study. Where **1**50 women diagnosed to have Carcinoma Breast, either newly diagnosed or those who were under treatment during the period of June 2014 to November 2015 were retrospectively analysed at department of Surgery **Tirunelveli Medical College Hospital,** where patients from rural part of southern tamilnadu are getting admitted.Detailed history on age at menarche, age at menopause, menstrual regularity, age at first child birth, oral contraceptive pill intake, family & diet were collected from reliable sources and complete clinical examination was done.

AIM AND OBJECTIVES

- To study the impact of menstrual status, lactation on Breast Cancer.
- To Associate Breast cancer with marital status, parity, obesity and family history, Oral contraceptive pills, hormone replacement therapy..
- To find the incidence of breast carcinoma in different age groups in TVMCH.
- To find the common way of presentation & management of breast cancer in TVMCH.

INCLUSION CRITERIA

Newly diagnosed cases or those who were under treatment during the period of June 2014 to November 2015

EXCLUSION CRITERIA

Patients who are unwilling or uncooperative.

Breast carcinoma patients who are men.

TOOLS

A Profoma in which all the entries were made.

RESULT

In the study of breast carcinoma cases reported in the Tirunelveli Medical College Hospital during the period of18 months, the following were reported.

- Among the 150 cases, the most common age incidence was 45- 49 years.(table 2)
- Attaining menarche at age less than 12 and menopause after 55 yrs is indeed a risk factor.72% patients have regular menstrual cycles, which give regular estrogen exposure and acts as risk factor. (fig.1) No case of early menarche was reported in this study, but 6% patients have a history of late menopause which is significant, a proven risk factor for the development of carcinoma. (fig. 2,4)
- 12 % of cases out of 150 cases are nulliparous. Nulliparous women are at greater risk than multiparous women. Death was reported at an early age in nulliparous women.
- Only 22% of the patients reported, breastfed for more than 2 years while other carcinoma fed for a lesser duration which indicate that the duration of breastfeeding plays significant role in preventing cancers. (fig.3)
- The time interval between the patient noticing the lump and reporting to the doctor was assessed. Results suggest that the ignorance of the disease in our patients leads to the late presentation in spite of the facilities available for early diagnosis. Only 4 cases underwent a diagnostic Mammogram.
- A well recognised influence in breast cancer risk is found with a history of the disease in a first degree relative grandmother, mother, sister and daughter. In my study, 3 cases hads a lump breast in her sister while another patient had a history of cancer breast in her mother, which could probably due to **BRCA 2** mutations. However the association is weak and has to be evaluated further technically.
- 100% presented with lump, 12% with fungating ulcer, 46% with pain, 7% with lymphodema, 16% with nipple retraction and 8% with bloody nipple discharge.
- Left sided presentation was common in my study with 62 % while the right constitutes 38%. Majority of the lump were found in the upper outer quadrant (38%), 24 cases of ca breast presented in multiple quadrants, as they are pre-

senting late stage of disease. The study reported at the Ellis Fischel Hospital, the distribution is more closely related to the study. Majority of the lump FNAC showed Invasive ductal carcinoma variety.

- Modified radical mastectomy was the procedure in cases of early stage of presentation. Simple mastectomy with Axillary Clearance was the procedure of choice in cases of operable breast cancer. In locally advanced cases of breast carcinoma before initiating surgical procedures neo adjuvant chemotherapy and radiotherapy followed by palliative mastectomy was found to be feasible in most of the cases.

DISCUSSION
AGE DISTRIBUTION
The risk of carcinoma breast increases sharply with advancing age after 30 as dated by the study conducted by Columbia Presbyterian Medical Centre during the 50 year period from 1916 to 1966. Similar report given by the DANMARK study by Clemmensen stastistical studies in malignant neoplasm 1965 Vol 1 p260. Similarly in my study no case reported below the age of 29 and there is steep increase thereafter and a peak incidence in the age group 44 – 49 closely as reported by the Columbia resbyteman medical center study for a period of 1916 – 1966.

MENSTRUAL FACTORS
Early menarche before the age of 12 yrs had the increase risk of Breast Cancer. No significant relationship was found in the recent studies of this factor Wynder et al 1960; Wynder et al 1978; Mac Mohan and Jeinleib 1960; Salber et al 1969; Mirra et al 1971; Pay master and Gangadharan 1972; Adami et al 1978. In this study, no case of early menarche was reported & hence its association with breast cancer could not be proved.

Late menopause will have an increased risk of Breast carcinoma. Bucalossi and Veronesi (1959) Mac Mohon and Feinleib in 1960 Wynder et al 1960, Levin et al 1964 paymaster and Gangadharan in 1972 in their studies reported a relationship with late menopause in cancer Breast patients.

AGE OF FIRST CHILD BIRTH & PARITY
Ramazzini's clinical observation with data showing the breast carcinoma was 3.5 times more frequent in nuns in other women. Taylor, canoll and Lloyd & Fraumeni (1969) reported that the mortality rate for carcinoma Breast in nuns is high. Indian Study – by Paymaster, Gangadharan (1970 – 1972) revealed parity is an important risk factor Mac Mohan concludes that the total number of births has no relationship to break carcinoma risk, except through its association with its age at first birth. Mac Mohal et al 1970, Linnefield et al 1975, Henderson et al 1974. The risk of breast carcinoma increases with advancing age at first child birth, from a relative risk for the women who had their first child under the age of 20, to a relative risk of 1.5 – 5.3 for those whose first child was born at the age of 35 or later. Wynder (1978) reported in his studies that late age at first birth (over the age of 25) significantly increased the risk of pre and peri menopausal patients but not for those who developed the disease post menopausally.

In this study I child birth below 20 yrs reported 16% and between 20 – 24 yrs in 44 %, 25- 35 yrs in 22% and >=35 in 4 %. 14% of the cases were nulliparous. (Table 1)

BREAST FEEDING
Levin found that with short histories of lactation upto 17 months the risk of breast carcinoma appeared to increase while thereafter the risk declined until at about 36 months or more. Average total life time nursery effort was only 3 or 4 months compared with the average of 6.4 years of lactation for Japanese women who have much less incidence breast carcinoma than North American women. No protection can be demonstrated

from, three or four months of lactation. Mac Mohan failed to confirm the hypothesis of the protective effect of Lactation in his studies in 1970.

Here the Lactation period reported are for less than 1year in 30 cases (20%) , not more than 3 years in 75 cases (50%) , more than 3 years in 24 cases (16%) ,no breast feeding in 12 cases excluding the nullipara & unmarried. (fig 3)

ABORTION
There is no clear association between risk and number of either spontaneous abortion or termination of pregnancy. Increased risk is reported in nulliparous abortion. Here no such report.

HISTORY OF ORAL CONTRACEPTIVE PILLS
Oral contraceptive pills is not popular mode of contraception in south Tamilnadu. Women prefer permanent sterilisation. 6 out of 50 patients took oral contraceptive pill for a short period. No association with oral contraceptive can be established in our study. Chemberlain J. Epidemiology of breast cancer study and several other case study show that there is no increased risk. Whereas others have considered this as an excess risk. At present risk of oral contraceptive use is reported when used before first full term pregnancy; used for long period (i.e) more than 10 years with higher dose preparation.

HORMONE REPLACEMENT THERAPY
Oestrogenic drugs are increasingly used to relieve menopausal symptoms and to prevent osteoporosis and possible ischaemic heart disease. Some preparations containing progesterone does lead to an increased risk of breast cancer. In our series no patient were taking hormone replacement therapy.

DIET
International figures for consumption of fat and to a lesser extent to meat correlate closely with International Breast Cancer. Rates several analytical studies have found that post menopausal obese women are at greater risk of than lean women. Here BMI was calculated for all the patients and 1 (2%) was found to be obese (BMI > 30), 11 (22%) cases were found to be overweight (BMI 25 – 30).

FAMILY HISTORY AND GENETIC PREDISPOSITION (BRCA 1 OR 2 MUTATIONS)
Waaler's Norwegian study (1932); Wain Wright in 1931; Jacobsen in 1946; Penrose Mac Kenzie and Karn in 1948; Smathers and his associates, Woolf in 1955; V.E. Anderson and associates (1958) studied and reported the significance of familial predisposition for Breast Cancer. If family history is present cancer breast is reported at younger age and is Bilateral. Anderson 1975 argued that the inheritance may be genetically heterogenous, and he reported the frequency of other forms of cancer notably Ca. Stomach, Colon, Rectum and Rectum and Uterus sarcoma leukemia and brain tumor.

In my study, 1 case has a lump breast in her sister while another patient had a history of cancer stomach in her mother, which could probably due to **BRCA 2** mutations. (fig 12)

EXOGENOUS CARCINOGENIC AGENT
Only recognised external carcinogen which has shown to increase the risk of Breast Cancer is radiation. No history of exposure seen in my study.

CLINICAL PRESENTATION
In Donegan WL Spratt JS (eds) Cancer of the Breast 2nd edition. Philadelphia W.B. Saunders co. 1979 p.50 and Haagensen (P). Disease of the Breast 2nd ed. Philadelphia W.B. Saunders co 1971 p.467 report the Cancer Breast present as palpable mass in 73.5% pain in breast 6.1% nipple discharge 4.4% and nipple

retraction 2.9% skin ulceration 0.3%. In our series the cases present as Breast Lump in 100%, fungating ulcer 12 %, bloody nipple discharge in 18 %, pain 46 % in lymphoedema 70 %, nipple retraction 6%.

Duration of lump varies from 20 days to 2 years according to the patients history. 6% patients presented with distant metastasis. The most common quadrant affected is the Upper Outer Quadrant & the most common side involved is the Left.

TREATMENT MODALITY

In our study the following protocol was followed. Ideal treatment for Stage I & II is curative surgery radiotherapy, Chemotherapy, Hormonal therapy. For Stage III & IV palliative surgery and radiotherapy, Chemotherapy & Hormonal therapy was done.

CONCLUSION

The Risk factors of breast carcinoma, especially the menstrual & lactational factors are assessed in the 150 cases studied and are found to be consistent contributing to the disease.
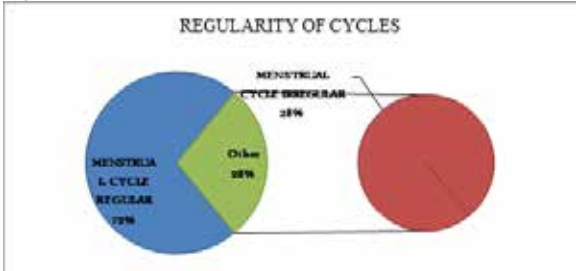
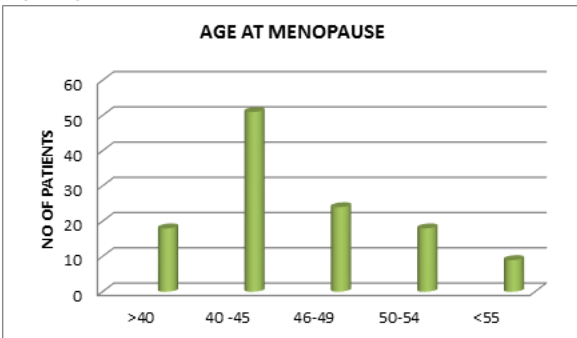**Fig 1- Menstrual status**

Fig 2. Age at menopause

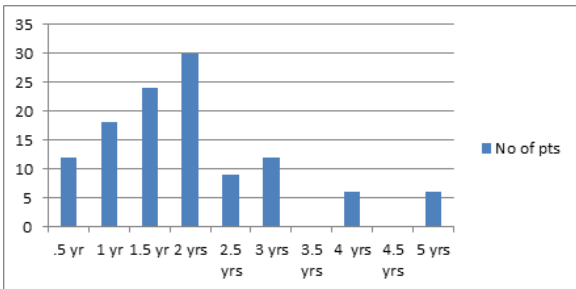**figure 3 average duration of breast feeding in breast carcinoma pts. in our study**
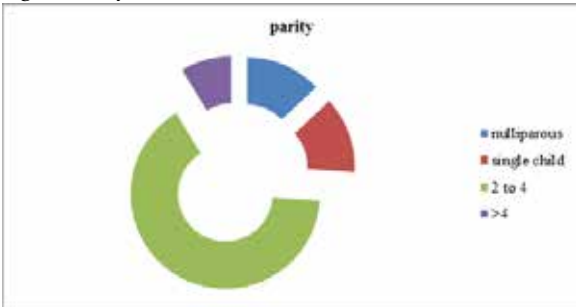

Fig . 4. Parity- no of children

Table 1. Age at first child birth

AGE AT FIRST CHILD BIRTH	>20	20 -24	25 - 34	< = 34	NULLIPARA
NO OF PTS	24	66	36	6	18

table2. Age at presentation of cancer Breast

30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	> 65
6%	4%	10%	22%	18%	10%	14%	16%

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