Research Paper

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Risk Factor Assessment in Patients With Breast Cancer in Government General Hospital, Guntur, India

Biotechnology

KEYWORDS : Breast cancer, Risk factor assessment, Epidemiology, Indian women.

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ABSTRACT

In India and other developing countries, breast carcinoma ranks second only to cervical carcinoma among women. Study is aimed to determine the strength of known risk factors, physical/functional aspects among women admitted for Breast Cancer surgery at Department of Surgery, Government General Hospital, Guntur, Andhra Pradesh, India. Data obtained from cases using a structured questionnaire including information on age, educational level, socio economic status, and risk factor data. Height and weight were measured. Body mass index (BMI) of the cases was calculated by using the formula weight in Kg/Height mt2. Fear, under both family as well as occupational stress, poverty leads to inadequate intake of balanced diet and high consumption of pickles & chilly powder, lack of awareness about low cost high nutritious foods, breast cancer, life time exposure to pesticides are the important aspects that delay treatment and diagnosis. Present study can be useful in understanding the epidemiology of breast cancer in this region. Public health programs that ensure access to self screening methods, appropriate, affordable diagnostic tests and treatment must be introduced.

Introduction:

Breast cancer is the most common malignancy among women and the fifth cause of death due to cancer both in the less developed (LDCs) and more developed (MDCs) countries worldwide (Ferlay J, Shin HR, 2010). In 2008, ASR was estimated to be 89.9 per 100,000 women-years in Western Europe, but only 19.3 in Eastern Africa (Ferlay J, Shin HR, 2010, Kamangar F, Dores GM, 2006). Although the incidence rate of breast cancer has decreased in the US and many other developed countries since early 2000s (Jemal A, Center MM, 2010), it has increased 50-100% in some Asian countries including India and China during the last two decades (Huang C-S, Lin C-H, 2010, Parkin DM, Fernández LMG 2006).

In India and other developing countries, breast carcinoma ranks second only to cervical carcinoma among women. The increase in the breast cancer cases is mainly being documented in the metropolitan cities; but these data are not totally reliable as many cases in the rural areas go unnoticed (Bangalore: NCRP; 2002). Recently Indian Council of Medical Research predicted the number of breast cancer cases in India to rise to 106,124 in 2015 and to 123,634 in 2020 (Programme, N. C. R. 2009). Breast cancer is a heterogeneous multifactorial disease caused due to genetic, reproductive, environmental, and dietary and lifestyle related risk factors.

Although many risk factors may increase the chance of having breast cancer, it is not yet known just how some of these risk factors cause cells to become cancerous (Atlanta: American Cancer Society; 2013; Cooper. 1998). Risk factors can be divided into un-modifiable risk factors and risk factors related to lifestyle choices. Un-modifiable risk factors are gender, age, genetic factors, family history, personal history of breast cancer, dense breast tissue, menstrual periods, breast radiation early in life, and treatment with diethylstilbestrol. Risk factors related to lifestyle are not having pregnancy history or pregnancy at late ages, recent use of birth control pills, using hormone therapy after menopause, not breast-feeding, alcohol, being overweight or obese, lack of exercise, and induced abortion (Cooper.1998;Fauci, Braunwald et al. 2008; Gallucci. 1985; Kumar, Abbas, et al. 2007; Atlanta: American Cancer Society; 2009; Edge S, Byrd DR, et al. 2010; Henderson IC. 1993). Study is aimed to determine the strength of known risk factors, physical/functional aspects among women admitted for Breast Cancer surgery at Department of Surgery, Government General Hospital, Guntur, Andhra Pradesh, India.

Methods and Materials:

Study was conducted from March 2012 to January 2015 at Government General Hospital, in the Department of Surgery, Guntur, Andhra Pradesh, India. The cases (n=150) were newly diagnosed breast cancer cases from all over Andhra Pradesh, and they were entered into the study if they had a confirmed pathological breast cancer diagnosis and were admitted for breast surgery. Data obtained from cases using a structured questionnaire including information on age, educational level, socio economic status, marital status and risk factor data. Based on Socio Economic Status (SES) the participants were grouped into poor, middle and high class. Height and weight were measured. Body mass index (BMI) of the cases was calculated by using the formula weight in Kg/Height mt2.

Statistical analysis: Statistical analysis was carried out by student's t-test. A value of $P<0.05$ was considered as statistically significant. Results are presented as Number with Percentage and mean ± SDs.

Results and Discussion:

The description of study variables number with percentage are shown in Table I. Age, education, type of family, family size, profession, socio economic status, and type of working industry were found to have significant association with breast cancer. In the present study most of the cases were illiterates (117 (78%), low income group (127 (84.66%) daily wagers (136 (90.66%) and working in the agriculture and family type was nuclear but number of the family was more than four members (106 (70.66%).

Table I: The description of study variables number with percentage.

Age	20-40 40-60 60 & above	10 (6.66) 102 (68) 38 (25.33)
Education	Illiterates Primary Education Sec.High School	117 (78) 25 (16.66) 8 (5.33)
Type of Family	Joint family Nuclear family	41 (27.33) 109 (72.66)
Family size	> 4 < 4	44 (29.33) 106 (70.66)
Occupation	Daily wagers Business House wife	136 (90.66) 4 (2.66) 10 (6.66)

Socio economic status	High Socio Economic Status Middle Socio Economic Status Low Socio Economic Status	0 23 (15.33) 127 (84.66)
Type of working Industry	Agriculture Industry Other	125 (83.33) 1 (0.66) 24 (16)

Mean Anthropometric measurements of cases with breast cancer were shown in Table II. Height, weight are the important measurements to know the health and nutritional status of the individuals. The mean height was155.3 ± 8.1. The mean weight before surgery was 46.22 ± 5.6 and after surgery 45.56 ± 5.14. The mean BMI grade before surgery was 18.3 ± 3.4 and after surgery 18 ± 2.9 respectively. There is no significant difference of cases weight and BMI grade before and after surgery.

Table II: Anthropometric Measurements of Cases with Breast Cancer:

	Before	After
Height	155.3±8.1	155.3±8.1
Weight	46.22± 5.6	45.56±5.14
BMI	18.3±3.4	18±2.9

Risk assessment of cases with breast cancer were shown in Table III. Out of 150 cases 122 (81.33) cases were non-smokers, 28 (18.66) cases were smokers. Out of 150 cases 35 (23.33) cases chewing tobacco/Gutca, 115 (76.66) cases do not take. Out of 150 cases 25 (16.66) cases were occasionally consume alcohol, 125 (83.33) cases were non consumers. Out of 150 cases 41 (27.33) cases were passive smokers, 109 (72.66) cases were not passive smokers. Out of 150 cases only 9 (6) cases were leading calm and relaxed life, 120 (80) cases were under family stress and 21 (14) cases were both both family and occupational stress. Out of 150 cases 141 (94) cases were non vegetarians only 9 (6) cases were vegetarians. Out of 150 cases 65 (43.4) cases highly consume spices especially chilly powder and pickles, 76 (50.66) cases consume moderately and only 9 cases were consume lightly.

Table III Risk assessment of Patients with Breast Cancer:

Smoking	Yes No	28 (18.66) 122 (81.33)
Chewing tobacco/ Gutca	Yes No	35 (23.33) 115 (76.66)
Alcohol Consumption	Yes No	25 (16.66) 125 (83.33)
Passive smoking	Yes No	41 (27.33) 109 (72.66)
Stress	Calm & Relaxed Under family stress Both family & Occupational stress	9 (6) 120 (80) 21 (14)
Type of Diet	Non Vegetarians Vegetarians	141 (94) 9 (6)
Spices	High consumption Moderate consumption Low consumption	65 (43.33) 76 (50.66) 9 (6)

Discussion:

In the present study all the cases were females aged between 40 to 60 years of age. 78% of the cases were illiteraterates. Female gender is the most important risk factor for breast cancer. Men can develop breast cancer, but the risk for females is about 100 times greater (American Cancer Society. 2014). In the present study most of the cases were from low income group, daily wagers and working in the agriculture and family type was nuclear but number of the family was more than four members. In contrast in the present study most of the cases were not habituated to alcohol, smoking and most of the cases were under weight. Majority of the patients were from a rural background, which was contradictory to the previous reports from India as well as United States, which show a higher incidence in urban population compared to the rural population (Sandhu, Sandhu. 2010). Many diagnoses occur at later stages because screening isn't available in those rural areas. Fear, under both family as well as occupational stress, poverty leads to inadequate intake of balanced diet and high consumption of pickles & chilly powder, lack of awareness about low cost high nutritious foods, breast cancer, life time exposure to pesticides are the important aspects that delay treatment and diagnosis. Shyamali Mukherjee,(2006) found that increasing use of pesticides, westernised food habits and due to other industrialised products, the levels of environmental contaminants are increasing say to day.

Conclusion:

Fear, under both family as well as occupational stress, poverty leads to inadequate intake of balanced diet and high consumption of pickles & chilly powder, lack of awareness about low cost high nutritious foods, breast cancer, life time exposure to pesticides are the important aspects that delay treatment and diagnosis. Late stage at presentation of breast cancer is the main problem and possesses a challenge to the health care community. In order to reduce the burden of breast cancer, a multi-sectorial approach and evidence-based strategies aiming at awareness about early detection and effective management of the disease are required. Present study can be useful in understanding the epidemiology of breast cancer in this region. Public health programs that ensure access to self screening methods, appropriate, affordable diagnostic tests and treatment must be introduced.

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