Epidemiological Study of Breast Cancer In Cuttack City, Odisha

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Abstract : Worldwide breast cancer has the highest incidence of all cancers in women. Over 100,000 new cases of breast cancers are estimated to be diagnosed annually in India. A fourfold increase in breast cancer incidences has been observed from the year 1980 to 2010 in both developed and developing countries. Generally this cancer is associated with lifestyle, age, socio-economic and demographic factors. In this study, it is found that the incidence of breast cancer is more common in rural area and in the age group of 36 to 55 year of women. Better approaches should be carried out to reduce this incidence by awareness and screening for early detection and availability of treatment facilities. It will help to reduce the burden of both incidence and mortality of breast cancer.

***IndexTerms* – Breast cancer, age, Socioeconomic.**

I. INTRODUCTION

Breast cancer is the most common cancers in women. Breast cancer has had the highest incidence of all cancers in women worldwide [1]. In the United States, one in eight women will develop breast cancer during their lifetime [2]. It is a heterogeneous disease with various subtypes and these are defined by their receptor with mechanisms of carcinogenesis [3]. Only 5%–10% of these cancers can be inherited genetic mutation. Generally this cancer is associated with lifestyle, including aging, null parity, age at menarche, late menopause, exogenous hormones, excess alcohol, tobacco, weight, insulin resistance and other environmental factors [4]. Mastectomy, chemotherapy and radiotherapy have greatly improved the survival of breast cancer patients and Patients have better survival as compared with other fatal cancers [5]. Many developed countries with small proportion of world population about 50% of breast carcinoma diagnosed worldwide [6]. Over one lakh new cases of breast cancer cases are estimated to be diagnosed annually in India [7]. A fourfold increase in breast cancer incidences has been observed from the year 1980 to 2010 in both developed and developing countries [8]. The information on the epidemiology of breast cancer in India is very limited. It is reported that diet may influence the incidence of breast cancer about 35% of breast cancer [9]. Here we intend to provide a hospital based comprehensive overview of the basic biological aspects like the effect of age, gender, geographical location, hormonal regulation and site of origin in different group of women individuals and risk factors of breast cancer.

II. METHODOLOGY

This study was conducted in Acharya Harihar Regional Cancer Centre, Cuttack, Odisha and private hospitals in Cuttack city of Odisha from June, 2018 to January, 2019. Breast carcinoma individuals were observed and identified by the physician . Consents were taken from the patients and then survey was undertaken. The survey was designed to prepare some questionnaire of their interest related to age, sex, occupation, familial history, clinical history and other complications. Primary data from the patients and secondary data were collected from the health care professionals and attendants of respective patients. Data were collected and verified for better analysis. Information collected were entered into MS excel spreadsheet for storage and statistically analysis.

III. Results

According to World Health Organization report, it is estimated 18 million cancer cases around the world in 2018 and out of this 9.5 million cases are male and 8.5 million are female. During our survey in different hospital we found different cancers like oral, stomach, gall bladder, cervical, ovarian, lung cancer, leukemia and breast carcinoma. During our study, it was found that out of 61cancer patients, 53 individuals were female and 8 were male. It was analysed that the numbers of patient admitted in the hospitals, among them 86.8% were female and 13.2% were male. It reveals that female patients are more in number and admitted during their treatment.

Breast cancer has ranked number one cancer among Indian females with age adjusted rate as high as 25.8 per100,000 women and mortality 12.7 per 100,000 women. Worldwide, there will be about 2.1 million newly diagnosed female breast cancer cases in 2018, accounting for almost 1 in 4 cancer cases among women[10]. According to GLOBOCAN 2018, it is estimated that out of all female cancer patients 11.6% female have breast cancer in entire world[11]. During our study, we observed that there were 53 women patients were treated for cancer and out of them 16 patients were with breast carcinoma. This is about 30.18% of total patients treated for all cancers. Here it shows that females are more susceptible breast carcinoma than other cancers.

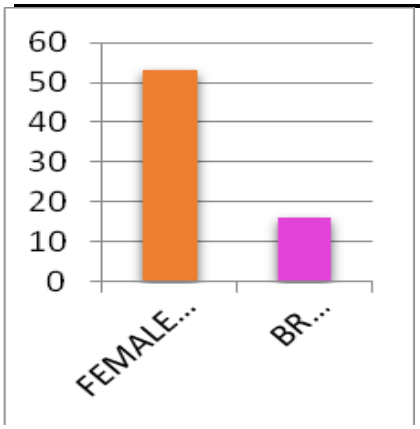


Fig.i Number of breast cancer individual with total number of female cancer patients.

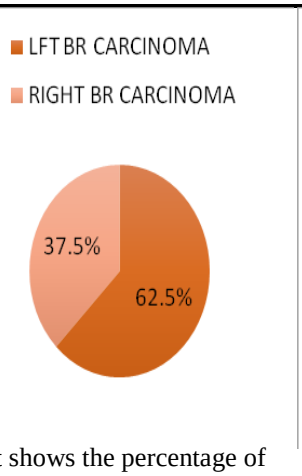


Fig.ii It shows the percentage of breast carcinoma in each side.

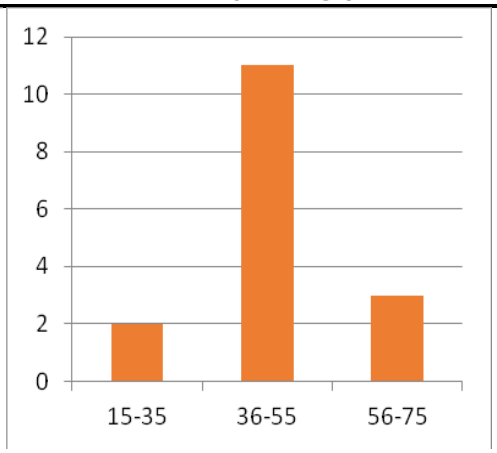
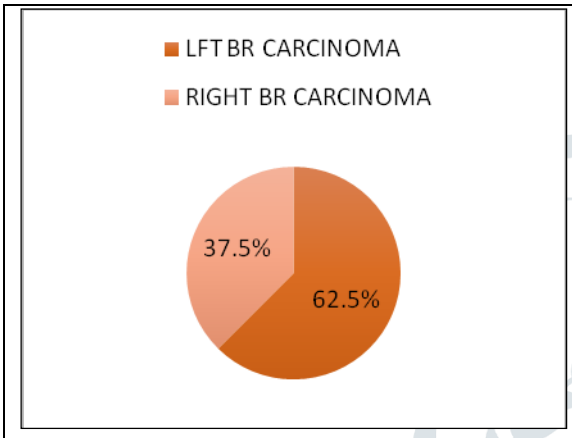


Fig.iii It shows number of female breast cancer patients in different age group.



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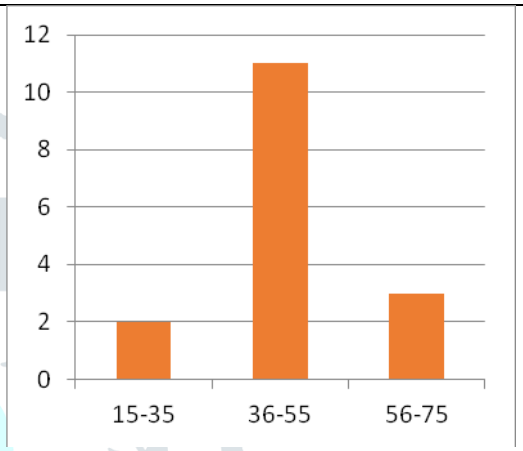


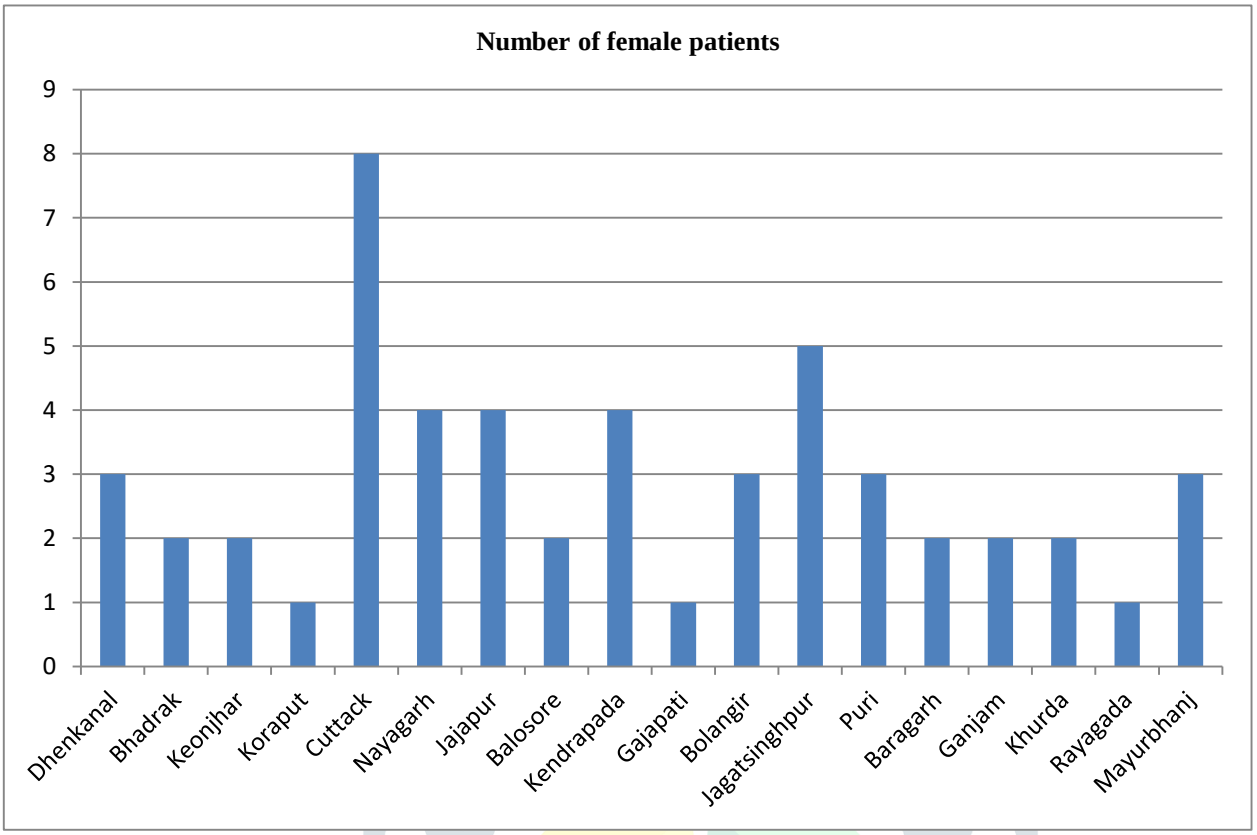
Fig.iii It shows number of female breast cancer patients in different age group.

Table.1 Presence of breast carcinoma in an individual with left or right side

Sl.No	Age	Gender	Occurance
1	19	Female	Left
2	30	Female	Left
3	36	Female	Left
4	38	Female	Left
5	40	Female	Left
6	40	Female	Left
7	47	Female	Left
8	55	Female	Left
9	61	Female	Left
10	73	Female	Left
11	39	Female	Right
12	40	Female	Right
13	47	Female	Right
14	50	Female	Right
15	52	Female	Right
16	65	Female	Right

It has been studied that unilateral breast cancer is more common in left breast than in right. Primary breast cancer was diagnosed in both breasts of 81 women, 35 in the left breast and 46 in the right breast. Those who have already lost one breast due to cancer, they may be risk of developing cancer remains for the left breast[11]. According to our study, out of 16 female breast cancer cases 10 patients i.e. 62.5% had in their left side breast and 6 patients i.e. 37.5% patients had disease in right breast.

The proportion of breast cancer cases have been arising in all age groups[12]. Here we conducted this study among three age groups, young (age ≤ 35), middle aged (>55) and elderly patients (>55). During our study we have observed that there are 16 patients and their age was in between 15 to 75. According to this, age group has made for graphical presentation. Here it is found that 12.5% patients were less than40 years of age, 68.75% were 36 to 55 years and 18.75% were more than 55 years. Our study shows that the maximum breast cancer causes at the age group of 36 to 55 years in female. The youngest patient was 19 years girl and the oldest female was of 77 years.



In this study there is incidence of this carcinoma in a wide geographical variation. There some patients belong to coastal region and some are from hill area. Out of 16 patients in this study cases 70% were from the rural area while rest of cases 30% was from urban areas. Here it is found that out of 16 cases 15 patients were married while one female individual was unmarried. The incidence of carcinoma is shown here in figure-iv.

Fig.iv Incidence of female cancers in different districts of Odisha during the study.

From the above analysis it was observed that more incidence of cancer in female were found in Cuttack and less in Koraput, Gajapati and Rayagada districts of Odisha due to socio-economic and communication constraints.

IV. Discussion

The above study concluded that the epidemiology of breast cancer, incidence and mortality mainly due to socio-economic and demographic position in Odisha. There are several risk factors increasing this incidence like socio-demographic, lifestyle and environmental factors. Delayed disease presentation due to lack of awareness and financial constraints are the leading cause for increasing mortality. A total of 16 patients with carcinoma breast were studied prospectively and the incidence was studied in age, sex, marital status, and various other variables. A multidisciplinary approach to breast cancer including awareness programs, preventive measure, screening programs for early detection and availability of treatment facilities are vital for reducing both incidence and mortality of breast cancer in women. Continuing progress in genomic and systems biology technologies will aid in understanding of the molecular and genetic bases of tumour heterogeneity and breast cancer metastasis. It will help us to identify more distinct diagnostic and prognostic biomarkers for breast carcinoma.

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