THE PREVALANCE OF BREAST CANCER IN POST- MENOPAUSAL WOMEN

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ARTICLE INFO	ABSTRACT
Key Words Post menopausal breast cancer, etiology, prevalence, risk factors. Access this article online Website: https://www.jgtps.com/ Quick Response Code:	**Aim & objective**: to study the prevalence of breast cancer, to identify the clinical presentation, risk factors & diagnostic methods, and the different types of treatment patterns used and assessing the epidemiological effects and women's knowledge about breast cancer. **Method**: a prospective observational study was conducted over a period of 6 months in the department of oncology in hcg pinnacle hospital, Visakhapatnam. A total of 100 female patients who were confirmed with breast cancer were included. **Results**: incidence of breast cancer was found to be more prevalent at the age group of 50-60 years and higher in non-vegetarian of about 64% compared to vegetarian people and 60% in rural population than in urban. According to family history increase risk of about 57% in total population was observed. Breast cancer as compared with women of both "normal "BMI and obesity using estrogen-progestin therapy associated with a 40%–50% increased relative risk of receptor-positive postmenopausal breast cancer. Younger age at menarche increase the risk, women who have a natural menopause after the age of 55 were at risk to develop breast cancer compared to menopause attaining before the age of 45. Postmenopausal women of 50 years or older with type 2 diabetes are at 20- 27% increased risk. Women at the age of 16-20 years with 1st pregnancy are at risk of 59%. The pregnancies of about 1-2 are at 78% and 3-4 are about 22%. **Conclusion**: our study concluded that breast cancer is highly seen in post menopausal patients like menarche, menopause null parity, first pregnancy, hormonal therapy.

INTRODUCTION

Breast cancer is the most commonly diagnosed invasive cancer in indian women. The incidence of breast cancer raising in india hence it is one of the sixth leading cause of disease for females since 2012.mostly the Modifiable risk factors related to life style 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, lake of exercise, induced abortion.breast cancer is the most common female cancer worldwide. And it will increase to over 2 million new cases/year by 2030.the incidence of breast cancer is rising in india (22.9%) and is now the second most commonly diagnosed cancer in women although many risk factors may increase the chance of having breast cancer.

Menopause does not cause cancer, but the risk of developing cancer increases as a woman ages. A woman who experiences menopause after age 45 has an increased risk of ovarian, breast, and uterine cancers. The risk is greater if a woman also began menstruating before age 12.a longer exposure to estrogen, and progesterone levels and the family history, age of first pregnancy and null parity are the risk factors that increases a woman's risk of breast cancers. Breast cancer is mainly starts in the cells of the breast as a malignant tumor. Like other cancers, there are several factors that can raise the risk of getting breast cancer. Damage to the dna and gene mutations that caused by estrogen exposure leads to the breast cancer. Some individuals inherit defects in the dna and genes like the brac1, brac2 and p53 among others. Those with a family history of breast cancer are at an increased risk of breast cancer.

Aims & objectives of the study: The aim of the study is the prevalence of breast cancer in post-menopausal women in hcg pinnacle cancer hospital, visakhapatnam.

The primary object is prevalence of breastcancer, to identify the clinical presentation, risk factors diagnostic methods, identified risk factor for thebrea cancer are non modifiable in nature including age, height, weight, family history, genetic factors, and child bearing histories, menstrual periods, breast radiation early in life.

and the different types of treatment patterns used.

The secondary object is assessing the epidemiological effects and women's knowledge about breast cancer.

Materials and methods

3.1. Study design

The proposed study was done on female patients who were histologically or cytologically confirmed with breast cancer. An hospital based prospective observational study which was conducted over a period of 6months in the department of oncology in hcg pinnacle hospital, Visakhapatnam. A total of 100 female patients who were histologically or cytologically confirmed with breast cancer were included in the study.

3.2. Study population

A total of 100 female patients

3.3. Study period

This study is conducted for 6 months.

3.4. Study place

Department of oncology in hcg pinnacle hospital, Visakhapatnam

3.5. Study criteria

3.5.1. Inclusion criteria

Subjects who were identified as patients suffering from breast swelling, pain in breast and a lump over breast and histologically or cytologically conformed with breast cancer were included into the study.

Subjects who reached menopause stage of age above 40 years are included.

3.5.2. Exclusion criteria

Children referred to higher institution. Subjects who are not histologically or cytologically conformed with breast cancer will not be included into the study.

Patients who have undergone hysterectomy or who were having any other ovarian problems and who had a personal history of cancer other than breast cancer were also excluded from

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3.6. Methodology

A demographical data collected from the patient case sheets in hcg pinnacle hospital, Visakhapatnam.

The proposed prospective observational study was conducted, once after the identification of patients; the data was collected from the patients before and after the treatment of breast cancer

3.7.Statistical tools

All the data collected were tabulated and analyzed using suitable statistical tools in Microsoft excel spreadsheet in a master chart. The data was analyzed by measuring the mean of all individual patients, then calculating the average mean of all. The standard deviation is calculated and the standard error is estimated. Results: post-menopausal breast cancer with the age group from 40 years to 80 years, the incidence of breast cancer was found to be more prevalent at the age group of 51-60 years (41%) and the incidence of breast cancer is (38%) in females of age group of 40-50 years.(19%) incidence of breast cancer was seen in patients of age group 61-70. Finally the incidence of breast cancer is seen only (1%) in 71-80 years. Calculate the average and standard values in percentage incidence of age wise distribution females ±14.03

4.1. Table 1: age group

Age in years	Female
40-50	38(38%)
51-60	41(41%)
61-70	19(19%)
71-80	1(1%)

Results: post-menopausal breast cancer with the age group from 40 years to 80 years, the incidence of breast cancer was found to be more prevalent at the age group of 51-60 years (41%) and the incidence of breast cancer is (38%) in females of age group of 40-50 years.(19%) incidence of breast cancer was seen in patients of age group 61-70. Finally the incidence of breast cancer is seen only (1%) in 71-80 years. Calculate the average and standard values in percentage incidence of age wise distribution females ±14.03

4.2. Table: 2 Dietary habits: (n=100)

Diet	Total female
Vegetarian	36 (36%)
Non-vegetarian	64(64%)

Results:

Percentage incidence of dietary habits in selected population 100 are higher in non-vegetarians of about (64%) females are consumed high fat foods and low nutritional food in their diet and the incidence of breast cancer is low in vegetarian people (36%).

Calculate the average percentage values of females±19.798

4.3. Table: 3
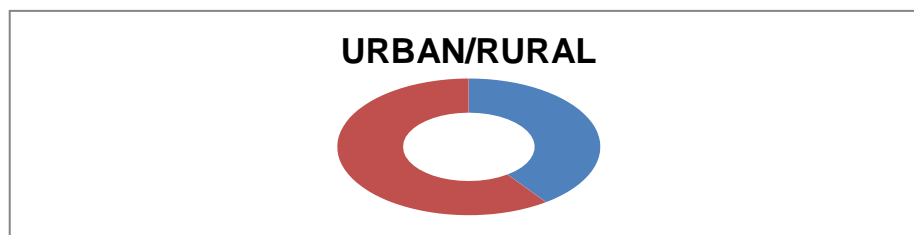
Percentage incidence of rural and urban areas: (n=100)

Pie graph represented the rural/urben areas

Results:

Selected population based on the 100 members divided in to urban/rural population. The incidence of breast cancer is (40%) in urban people where the incidence is (60%) in rural population are reported. Based on the incidence of breast cancer rural/urban areas calculated the average and standard deviation values of females±14.142

4.4. Table: 4 Family history: (n=100)

Family history	Total females
Significance	57(57%)
Nil-significance	43(43%)

Results:

The selected population based on the 100 members the incidence of breast cancer is significance of about (57%) in patients and the incidence is nil-significance of about (43%) in total population represents the family history of breast cancer that shows the average and standard values are calculated in females
 ±9.8.

4.5.table: 5 Body mass index: (n=100)

BMI	Total female
Under weight bmi<18.5	1(1%)
Normal bmi 18.5-25	31(31%)
Over weight bmi 25-30	22(22%)
Obese bmi 30 above	46(46%)

Results:

Under weight bmi <18.5 females are about only 1%

Normal weight bmi 18.5-25 females of 31% with maximum range over weight bmi
 25-30 females are 22%

Obese bmi 30 above females are about only 46% with higher range.

4.6. Table: 6 Menarch age: (n=100)
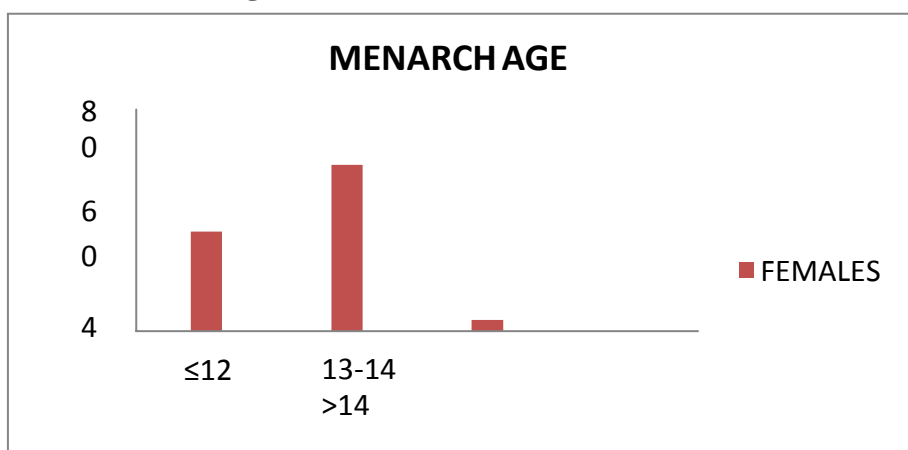
Bar graph represented the menarche age
 Results:

The age wise distribution according to menarche in breast cancer of age ≤12 shows 36%

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of maximum carcinoma in females. And the age of 13-14 shows 60% of higher carcinoma in female breast. The carcinoma is low in people whose menarche age is ≥14. Calculate the average and standard values in carcinoma due to menarche in females±28.085

4.7. Table: 7

Menopause age: (n=100)

Menopause age	Total female
≤50	45(45%)
51-60	55(55%)
≥60	0(0%)

The age wise distribution according to menopause the age ≤50 are (45%) of higher range   that cause carcinoma and the age 51-60 years are of (55%) while ≥60 years people are shown no result in breast carcinoma.Calculated the average and standard value in females based on menopause age ±29.297

4.8. Table: 8

Sight of carcinoma: (n=100)

Sight of carcinoma	Total female
Ca. Lt breast	64(64%)
Ca. Rt breast	36(36%)

Sight of carcinoma according to the breast cancer the incidence of breast cancer is (64%) on left side breast while the incidence of carcinoma to the right side breast is about (36%) in breast cancer females.
Calculate the average and standard values in females±19.79

4.9. Table: 9 Carcinoma caused by harmones: (n=100)

Hormone status	Total female
Er+ ve , pr+ ve	74(74%)
Er- ve , pr - ve	26(26%)

Results: the hormonal status that the breast cancer is seen in patients based on estrogen and progesterone hormones(positive or negative)the incidence of breast cancer with er+ve,pr+ve are about (74%) which is higher when compared to the er-ve,pr-ve in which the incidence is (26%) in total 100 females.
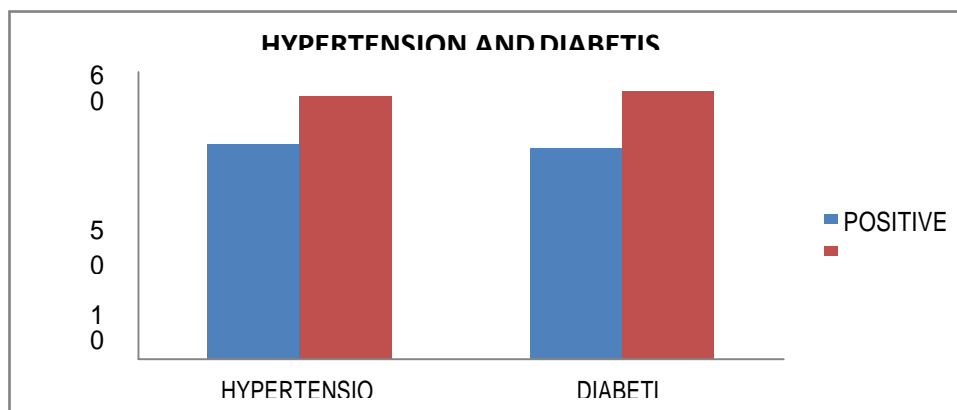Calculate the average and standard values for hormonal status in females±33.94

4.10. Table: 10

Treatment	Total female
Chemotherapy	52(52%)
Radiation therapy	31(31%)
Surgerys	12(12%)
Support care	5(5%)

4.11. Table: 1 Hypertension and diabetis: (n=100)

Diagnosis	Positive	Negative
Hypertension	45(45%)	55(55%)
Diabetis	44(44%)	56(56%)

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HYPERTENSION AND DIABETIS

Bar graph represented the hypertension and diabetes patients in breast cancer

Results: selected 100 females on hypertension and100 females on diabetes in our study the incidence of breast cancer in hypertension positive people are about (45%). And the incidence of breast cancer with diabetes positive is (44%).

4.12.table 12:Age of 1ˢᵗ pregnancy: (n=100)

Age of 1ˢᵗ pregnancy	Females
≤15	10(10%)
16-20	59(59%)
>20	31(31%)

Bar graph represented the age of 1ˢᵗ pregnancy

Results:in selected 100 patients the 1ˢᵗ pregnancy is about (59%) among the age between 16- 20 year females, and (31%) is seen among the females who are >20 years and in females who are ≤15 years are only show (10%) when compared to other females who have age greater than 15 years.Calculated the average and standard values of 1ˢᵗ pregnancy in females ±24.58.

4.13.table 13:Parity age (n=100)

Parity age(years)	Females
1-2	78
3-4	22
5-6	0

Results:in the total number of patients according to their parity age the pregnancies of about 1-2 are 78% and the 3-4 are about 22% shows that the less number of pregnancies may be a chance to get breast cancer in females.

Results: the utilization of treatment of chemotherapy in breast cancer is higher of about (52%) and (31%) treatment of radiotherapy is utilized by the patients. The surgery is done on patients of about (12%) and (5%)support care are taken by the patients having breast cancer.

Calculate the average and standard values for breast cancer treatment in females±21.08

Patient utilization treatment: (n=100)

V. Discussion

Breast cancer:

With 1 million new cases in the world each year, breast cancer was the commonest malignancy in women and comprises 18% of all female cancers. Where the age standardised incidence and mortality wes the highest in the world, the incidence among women aged 50 approaches two per 1000 women per year, and the disease is the single commonest cause of death among women aged 40-50, there are more than 14,000 deaths each year, and the incidence was increasing particularly among women aged 50-64, probably because of last stage diagnosis in this age group (k mcpherson., cm steel, jm dixon - bmj: british medical journal, 2000).

Some previous studies stated that breast cancer is a disease of older women and its

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incidence increases with age, and it is rare below the age of 20 years. A majority of postmenopausal women who are at the age of 50-60 are more likely to develop breast cancer. Even young women who had family history of breast cancer they are also more likely to develop a breast cancer. More than 60% of women included in the study were diagnosed before the age of 60 years. (edge s, byrd dr et al., 2010).

Dietary habits: According to this study the percentage incidence of breast cancer according to dietary habits in selected population are higher in non-vegetarian of about 64% who are consumed high fat food and low nutritional food in their diet then vegetarian people

Although there is a close correlation between the incidence of breast cancer and dietary fat intake in populations, the true relation between fat intake and breast cancer does not appear to be particularly strong or consistent. Various lines of evidence suggest that dietary habits may exert their influence primarily during the post menopausal years. Current use of meat, poultry, and fish is associated with elevated relative risks. Similarly, current use of cheese and eggs are associated with non-significant elevation in risks. (paul k. Mills phd, mph et al., august 1989).

Incidence of rural and urban areas: The incidence of breast cancer is of about 60% in rural population than in urban are reported.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 ds, sandhu et al.,2010).

Family history: According to this study the incidence of breast cancer according to family history is significantly increased of about 57% in total population. Most women in the india have a one in eight chance of developing breast cancer in their lifetime. It's not easy to give a single definition of a family a history of breast cancer, because there are disease if: several blood relatives in family have had breast cancer or ovarian cancer or blood relatives who were diagnosed with breast cancer at a relatively young age (eg under 40). Breast cancer is a common disease, so having one relative diagnosed over the age of 40 is not unusual and would normally suggest that other family members are at increased risk.For each 100 women with breast cancer about 90 (estimates vary from 85 to 95) will not have a significant family history. About 10 will have a family history that may explain why they developed breast cancer. Of these: about five will have a fault in a gene known to be linked to breast cancer (eg brca1, brca2 or tp53). About five will have no known genetic reason for their family's increased risks (family history of breast cancer guide, september 2015)

Body mass index: The studies suggest that obese women have an increased risk of hormone receptor–positive postmenopausal breast cancer as compared with women of "normal" body mass. Risk ratios appeared attenuated for hormone receptor–negative breast cancer and, for postmenopausal breast cancer, among women using estrogen-progestin therapy.This study estimates that obesity is associated with a 40%–50% increased relative risk of receptor-positive postmenopausal breast cancer.Observational studies agree that estrogen-progestin therapy increases risk of postmenopausal breast cancer. This analysis suggests that the relationship between body mass index and postmenopausal breast cancer was strongest in women who never took estrogen-progestin therapy. With the dramatic decline in use of postmenopausal hormones, the role of body mass index in postmenopausal women is likely elevated. Decrease of obesity after menopause is likely an effective measure to decrease the burden of breast cancer.(mark f. Munsell, brian l. Sprague, et al., epidemiol rev.2014)

Menarch age: The study results wereexplaining regarding age at menarche and breast cancer risk. This study reported that younger age at menarche increased breast cancer risk only in premenopausal women,

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while some reported, increased risk only for postmenopausal women. In some studies done previously, age at menarche was found to be associated with post-menopausal breast cancer, in this study, early onset of menarche was found to be associated with post-menopausal patients as the majority of the patients attained puberty at an age of <12 years. The median age of menarche worldwide is 14 years with a range from 11 to 18 years. Some studies done on indian women showed that the risk of postmenopausal breast cancer decreased with delay in the onset of menarche.

Menopause age: According to our study womenwho start menstruating early in life or who have a late menopause have an increased risk of developing breast cancer. Women who have a natural menopause after the age of 55 are twice as likely to develop breast cancer as women who experience the menopause before the age of 45. The incidence of breast cancer in this study was found more in postmenopausal women. In postmenopausal women majority of them attained menopause after the age of 45 years.Late menopause increases the risk of breast cancer. Postmenopausal women have higher risk based on childbearing pattern. Risk increases by almost 3% for each year older at menopause (natural or surgery induced), thus women who has attained menopause at 55 years rather than 45 years, has approximately 30% higher risk. In this study, majority of the women reached menopause after the age of 45 years.risk of developing breast cancer increased in post-menopausal patients who had early onset of menarche and late menopause possibly due to the increase in the duration of hormonal exposure.(sandhu ds, sandhu s et al., indian j cancer. 2010).

Sight of carcinoma: The incidence of breast cancer was more in the upper and central quadrants of either side mainly left side of the breast probably because of larger volume of breast tissue is present in that quadrants.(kumar v, abbas ak et al.,2007).**Harmone receptors:** Tccording to our study the incidence of estrogen and progesterone positive hormonal receptors are mainly cause 75% of the breast cancer in females than estrogen and progesterone negative hormonal receptors.knowing the hormone receptor status of cancer helps doctors decide how to treat it. If cancer has one or both of these hormone receptors, hormone therapy drugs can be used to either lower estrogen levels or stop estrogen from acting on breast cancer cells. This kind of treatment is helpful for hormone receptor-positive breast cancers, but it doesn't work on tumors that are hormone receptor- negative (both er- and pr-negative). All invasive breast cancers should be tested for both of these hormone receptors either on the biopsy sample or when the tumor is removed with surgery. About 2 of 3 breast cancers have at least one of these receptors. This percentage is higher in older women than in younger women.

A test called an immunohistochemistry or ihc is used most often to find out if cancer cells have estrogen and progesterone receptors. Test results will give hormone receptor status. It will say a tumor is hormone receptor-positive if at least 1% of the cells tested have estrogen and/or progesterone receptors. Otherwise the test will say the tumor is hormone receptor-negative. (american cancer society

Treatment: Treatment of breast cancer should be multi-dimensional and multi-disciplinary in nature and must be given based on the stage of the disease. Optimized treatment can be enhanced when diagnosis is made early. According to this study the majority of the patients irrespective of their stage of disease received adjuvant treatment in which surgery was complemented by either chemotherapy or radiotherapy or both. Usually combination of both chemotherapy and radiotherapy was given after surgery. Adjuvant treatment was found very fruitful in both early and advanced breast cancer. In early breast cancer, it reduces the risk of local recurrence and in advanced breast cancer it delays loco regional recurrence, reduces growth of systemic metastasis and prolongs the life of the patients. The only surgical

procedure used was mrm (modified radical mastectomy). Patient ignorance, absence of proper treatment units and poor follow-up are the main reasons for a low rate of breast conserving surgery. Chemotherapy plays a major role in the treatment of breast cancer. Intensive use of chemotherapy is indicated from 4 to 12 cycles in invasive breast cancer. Hormonal therapy was not given to the patients after completion of treatment which is very essential. It was found that hormonal therapy was not followed by patients mainly due to financial problems**.** (webmd, archived from the original on 28 december 2012.)**Hypertension and diabetis:** This study shows that the number of patients with hypertension and diabetes are about 45% in total number of female patients that are associated with breast cancer.hypertension is associated with increased risk of breast cancer, especially among postmenopausal women. Consequently, health workers should increase the rate of breast cancer screening for postmenopausal hypertensive patients. Meanwhile the, general population is recommended to be involved in behavioral interventions like diet or physical activity to lower the risk of breast cancer by controlling the development of hypertension.(hedong han,wei guo, and jia he sci rep.2017)We conclude that ht (hypertension) is significantly associated with breast cancer for women living in a post-transitional country. However, further studies are needed to confirm this relationship independently in pre- and postmenopausal women. Hypertension is highly prevalent in latin america and may be a modifiable risk factor for breast cancer; therefore, even a small effect between hypertension and breast cancer could have extensive, population-wide implications**.**(ana pereira1,2, maria luisa garmendia, maria elena alvarado et al., apjcp,2012)**Diabetes** is associated with an increased risk of developing cancer, such as breast cancer. This is why maintaining the right amount of glucose in our bodies is so important. It was first observed 50 years ago that the breast cancer, is more commonly

found in people with diabetes. More recent studies have reinforced a link between cancer and diabetes and have been able to specifically identify a link between breast cancer risk and type 2diabetes.**Type 2 diabetes:** postmenopausal women 50 years or older who have type 2 diabetes have about a 20-27 percent increased risk of breast cancer. Type 2 diabetes causes several changes that could increase breast cancer risk such as high glucose levels, high insulin levels and increased inflammation.

In addition, many risk factors for developing type 2diabetes and breast cancer overlap – such as being older, being overweight or obese and lack of regular physical activity.**Type 1 diabetes**: Unlike type 2 diabetes, women with type 1 diabetes do not appear to have an increased risk of cancer. People with breast cancer who also have type 2diabetes have as much as a 50 percent increased chance of dying (mortality) from any cause.(p.boyel, m.boniol et al.,oct 2012)

Age of 1st pregnancy: According to this study the age if 1st pregnancy is seen in people of age 16- 20 years of about 59% that shows early pregnancy with hormonal changes leads to breast cancer.Early age at first full-term pregnancy (fp) full term first pregnancy is inversely related to breast cancer risk. This association perhaps reflects either a pregnancy induced maturation of mammary cells, and thus making them less susceptible to carcinogenic transformation or a long-lasting hormonal change or both. In this study, it was found that the majority of the women were at an age younger than 30 during their first pregnancy. However, information regarding the age at last pregnancy was lacking. Late age at last fp also has been found to be associated with a higher risk of breast cancer, more studies must be done to investigate the association between age at any fp and breast cancer risk.(chie wc, hsieh c, am j et al.,epidemiol. 2000)

Parity age: According to this study the pregnancies of about 1-2 are 78% and the 3-4 are about 22% shows that the less number of pregnancies may be a chance to get breast

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cancer in females.

High parity has generally been associated with low breast cancer risk in previous epidemiological studies. Null parity was associated with an overall increased risk of breast cancer. Contradictory to the previous studies and available literature it was found that many women in this study presented with breast cancer despite of high parity.Prolonged null parity is a risk factor for breast cancer. For instance, a meta-analysis of 8 population-based studies in the nordic countries found that never giving birth was associated with a 30% increase in risk of breast cancer compared with women who have given birth, and for every 2 births, the risk was reduced by about 16%. Women having their first birth after the age of 35 years had a 40% increased risk compared to those with a first birth before the age of 20 years. (jiang ar, gao cm asian pac j cancer prev. 2012) practicing breast feeding was believed to minimize the risk of breast cancer in both pre-and post-Menopausal patients. The longer the duration of breastfeeding by women, the greater protection and the risk is relatively reduced by 4% for every 12 months of breastfeeding. But it is reported that increased duration of breastfeeding was associated with a significantly decreased risk of premenopausal breast cancer, but no effect was seen in women with postmenopausal breast cancer.(jiang ar, gao cm asian pac j cancer prev. 2012)The data from indian studies overall suggests that the role of known risk factors on the development of breast cancer within the indian population is unclear and a large multi-center study would be of benefit to try and understand the shifting trends in breast cancer incidence in this population.

The nature of disease presentation and tumor characteristics were found independent of the menopausal status and were related to the stage of the disease. Lump in the breast was the chief presenting complaint of all the women in this study as reported in various studies. Due to lack of knowledge about breast cancer they were not able to detect their disease. The problem of late presentation is mainly due to rural background, poverty and lack of awareness. Hence by educating the masses on self-breast examination and screening techniques, they can detect their disease themselves which could also help in early diagnosis of the disease.This study has certain limitations. First, the prevalence of breast cancer cases was studied rather than the incidence. Information about genetic risk factors was absent. Despite of limitations, this study can be useful in understanding the epidemiology of breast cancer in this region**.**(aruna surakasula, govardhana chary nagarjunapu et al.,2014)

CONCLUSION

After conducting the study and analyzing the results following conclusions were drawn:Life events are important risk factors for breast cancer including early menarche (before the age of 12), late natural menopause (after the age of 55), not bearing children and first pregnancy over the age of 30, as they all increase lifetime exposure to estrogen and progesterone and the risk of breast cancer. Ionising radiation exposure from medical treatment such as x-rays, particularly during puberty, increases the risk of breast cancer, even at low doses. Hormone therapy (containing estrogen with or without progesterone) increases risk of breast cancer and the risk was greater with combined estrogen plus progesterone preparations. Oral contraceptives containing both estrogen and progesterone also cause a small increased risk of breast cancer in young women, among current.

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