IOSR Journal Of Humanities And Social Science (IOSR-JHSS)
Volume 21, Issue 5, Ver. 5 (May. 2016) PP 91-98
e-ISSN: 2279-0837, p-ISSN: 2279-0845.
www.iosrjournals.org

Role of Dietary factors and lifestyle on Development of Breast Cancer among females in Kashmir Valley

Miss. AnesaMajeed
(M.sc Dietetics and Food Service Management, NET.)

Abstract**:**Breast diseases are classified as Benign Breast disease (BDD) and Malignant Breast disease. BDD is not life threatening. Breast cancer is a malignant proliferation of epithelial cells lining the ducts or lobules of the breast.Epithelial malignancies of the breast are the most common cause of Cancer in women, accounting for about one-third of all cancer in women. An attempt was made in this regard to assess the dietary factors / habits and lifestyle which may contribute in the development of breast cancer. A sample of 100 OPD patients (women) was drawn by judgment sampling in the hospitals of Srinagar district of Kashmir valley (SKIMS and SMHS). Data was collected by using a framed questionnaire. Staging of breast cancer was done by TNM classification given by American joint committee on cancer. The results revealed that the intake of vegetables, fruits (fresh and dry), omega-3 rich foods were very less and fat consumption was high. The awareness level of the patents was poor.

Keywords: *Breast cancer,Benign Breast Disease, malignant Breast Disease, Epithelial cells, dietary factors* .

I. INTRODUCTION

Breast Cancer is a malignant proliferation of epithelial cells living the ducts or lobules of the Breast.Human Breast Cancer is a clonal disease; a single transformed cell – the end result of a series of somatic (acquired) or germ line mutations, is able to express full malignant potential. A family history is a risk factor for the development of breast cancer, and 5% to 10% of breast cancer is attributable to inheritance of an autosomal dominant gene. The probability of genetic inheritance increases if there are multiple affected relatives and the cancers occur at young ages. Two genes, BRCA1 and BRCA2, account for the majority of hereditary breast Cancers. However, less than 20% of women with a family history of breast Cancers. However, less than 20% of women with a family history of breast cancer will carry these genes.

Breast cancer is uncommon before age 25 years, but then there is a steady rise to the time of menopause, followed by a slower rise throughout life. The average age at diagnosis is 64 years.

Byers et.al (2002), found diets high in fat also tend to be high in calories and contribute to obesity, which in turn is associated with increased risk of caners at several sites, including Breast (among postmenopausal women).

In premenopausal women, lesions that are either equivocal or non-suspicious on physical examination should be reexamined in 2 to 4 weeks, during the follicular phase of the menstrual cycle. Days 5 to 7 of the cycle are the best time for breast examination. A dominant mass in postmenopausal woman or a dominant mass that persists through a menstrual cycle in premenopausal women should be aspirated by fine-needle biopsy.

The American joint committee on cancer staging divides the Clinical stages as follows:

Stage 0: DCIS or LCIS (5 –year survival rate 99%).

Stage I: Invasive carcinoma 2 cm or less in size (including carcinoma in-situ with microinvasion) without nodal involvement and no distant metastases (5 –year survival rate 92%).

Stage II: Invasive carcinoma 5cm or less in size with involved but movable auxillary nodes and no distant metastases, or a tumor greater than 5 cm without nodal involvement or distant metastases (5-year survival rate 82%).

Stage III: Breast Cancers greater than 5 cm in size with nodal involvement ; or any breast cancer with fixed auxiliary nodes; or any breast cancer with involvement of the ipsilateral internal mammary

lymph nodes; or any breast cancer with skin involvement, pectoral and chest wall fixation, edema, or clinical inflammatory carcinoma, if distant metastases are absent (5-year survival rate 47%).

Stage IV: Any form of breast cancer with distant metastases (including ipsilateralsuproclavicular lymph nodes) (5-year survival rate 14%).

Epidemiological studies strongly suggest that high intake of food rich in BETA-carotene as well as those rich in vit.E or C decrease the risk of breast Cancer. Beta-carotene are present in green leafy vegetable, ripe yellow fruits and vegetables like papaya, musk melon, mango, pumpkin and carrots. Vitamin C , source are citrus fruits, orange, lemon, sweet lime, guava, goose berry, sprouted pulses. Vitamin E, are present in cereals, and its products , oil seeds and nuts.Selenium, a mineral is also associated with cancer prevention and are found in, sea foods.

Lycopene: A Carotenoid found in tomatoes, red grape fruit, guava, dried apricot, are most effective biological singlet –oxygen quenchers, two times as powerful as Beta- carotene in the destruction of the free radicals. Lutein and Zeaxanthin which are carotenoides reduce the risk of breast cancer.

Arnot Bob (1998), Soy's role in prevention of cancer is potentially the strongest because it strikes the estrogen pathway in so many places. The only kind of soy products that work to block the estrogen receptor are ones containing on ingredient called " genistein" soy products with no genistien had no effect on blocking the estrogen receptor.

According to ShamalaRatnesar (2002), The main cause of death in women with breast cancer is the development of metastasis:- The French study investigated women who had breast cancer, concluded that a low concentration of the short chain omega-3 fatty acid, ALA, in the fatty tissue around their breasts indicated a much greater risk of developing metastases.

Thus, include plenty of ALA in daily diet by consuming mustard seed oil canola oil, canola margarine; linseeds and linseed oil , soy and linseed bread; walnuts and pecan nuts; green leafy vegetables and fish .

B. Shrilakshmi (2006), Life time total physical activity reduces the risk of postmenopausal breast cancer. Exercise can have significant benefits for breast cancer survivors during and after treatment. The general aerobic prescription is for moderate intensity activity (50-75% heart rate reserve) 3-5 days per week, 20 to 60 minutes per session.

II. Review of literature

Reynolds et.al. (1995); Carried research on 116,544 retired and current female teachers in California, to see whether 'active smoking increases breast cancer risk'.They found during 5 year study period, that 2,005 of the women without a personal history of breast cancer were diagnosed with invasive breast cancer. They found passive smoking doesn't appear to increase breast cancer risk. But the active smoking appears to increase a women's risk of developing breast cancer.

Messina et.al. (1994), Stoll (1996);Conducted study on soy and other plant foods. He found that isoflavones and lignans which are biologically active in humans, acting as weak oestrogens/antioestrogens in premenopausal women, supporting output of gonadotrophine and extending the length of the menstrual cycle, especially the follicular phase which may result in protecting against breast cancer.

Key TJ, Allen NE, et.al. (2003);The major risk factors for breast cancer are hormone-related, and the only well-established diet-related risk factors for breast cancer are obesity and alcohol consumption. Obesity increases breast cancer risk in postmenopausal women by around 30%, probably by increasing serum concentrations of bioavailable oestradiol. Moderate alcohol intakes increase breast cancer risk by about 7% per alcoholic drink per day, perhaps also by increasing oestrogen levels. Populations with high fat intakes generally have high rates of breast cancer, but studies of individual women have not confirmed an association of high fat diets with breast cancer risk. Phyto-oestrogens can affect hormone metabolism, but data on phyto-oestrogen consumption and breast cancer risk are inconsistent. Nutrition might affect breast cancer risk by altering levels of growth factors such as insulin-like growth factor-I. Current dietary advice should be to avoid obesity, limit alcohol intake, and maintain a varied diet.

Hites.R. et.al. (2004); Carried research on the "Farm Raised Salmon containing more toxin than wild Salmon". They collect more than 700 salmon samples from sea food wholesalers and retailers in

several cities around the world, to see the four common toxins (PCB, dioxin, toxaphene and dieldrin) in the fish sample, which are suspected to cause cancer.

They found that farmed salmon had more toxins than the wild salmon and conclude that people should eat farmed salmon, not more than once a month, to avoid risk from the cancer causing toxins they contain, but the wild salmon is safe to eat.

Trock.Bj, Hilakivi-Clarke.L,Clarke.R, (2006); Conducted study entitled, "Meta-analysis of Soy Intake and Breast Cancer Risk". 18 epidemiologic studies (12 case-control and six cohort) were taken from 1978 through 2004, that examined soy exposure and breast cancer risk.They found that, in a pooled analysis, among all women high soy intake was modestly associated with reduced breast cancer risk. When exposure was analyzed by soy protein intake in gram/day, a statistically significant association with breast cancer risk was seen only among premenopausal women.Hence, they concluded that soy intake may be associated with a small reduction in breast cancer risk. Recommendations for high dose isoflavone supplementation to prevent breast cancer or prevent its recurrence are premature.

Monninkhof, Evelyn M., et.al.,(2007);found there was strong evidence for an inverse association between physical activity and postmenopausal breast cancer with risk reductions ranging from 20% to 80%. For premenopausal breast cancer, however, the evidence was much weaker. For pre- and postmenopausal breast cancer combined, physical activity was associated with a modest (15-20%) decreased risk. Evidence for a dose-response relationship was observed in approximately half of the higher-quality studies that reported a decreased risk. A trend analysis indicated a 6% (95% confidence interval = 3% to 8%) decrease in breast cancer risk for each additional hour of physical activity per week assuming that the level of activity would be sustained.

Bernstein. L, Patel. Avb, Ursin. G, et.al., (2007);Conducted study on "Lifetime Recreational Exercise activity and breast cancer risk among black women and white women". In this study, black and white women aged 35 to 64 years with newly diagnosed invasive breast cancer were taken, the detailed histories of lifetime recreational exercise activity during in person interviews were collected, with 4538 case patients with breast cancer (1605 black and 2933 white) and 4649 control subjects (1646 black and 3033 white) control subjects were frequently matched to case patients on age, race, and study site.They found that among all women, decreased breast cancer risk was associated with increased with increased levels of lifetime exercise activity. An average annual lifetime exercise activity that was greater than the median level for active control subjects was associated an approximately 20% lower risk of breast cancer, compared with that for inactivity.

Chlebowski,Rowan T,(2011); Preclinical investigations and selected clinical observational studies support an association between higher vitamin D intake and 25-hydroxyvitamin D levels with lower breast cancer risk. However, the recently updated report from the Institute of Medicine concluded that, for cancer and vitamin D, the evidence was 'inconsistent and insufficient to inform nutritional requirements'. Against this background, reports examining vitamin D intake, 25-hydroxyvitamin D levels and breast cancer incidence and outcome were reviewed. Current evidence supports the pursuit of several research questions but not routine 25-hydroxyvitamin D monitoring and vitamin D supplementation to reduce breast cancer incidence or improve breast cancer outcome.

Wu, A. H. and Butler, L. M. (2011);The identification of modifiable lifestyle factors that could reduce the risk of breast cancer is a research priority. Despite the enormous chemopreventive potential of green tea and compelling evidence from animal studies, its role in breast cancer development in humans is still unclear. Part of the uncertainty is related to the relatively small number of epidemiological studies on green tea and breast cancer and that the overall results from case-control studies and prospective cohort studies are discordant. In addition, the mechanisms by which green tea intake may influence risk of breast cancer in humans remain not well studied. We review the human studies that have evaluated the relationship between green tea intake and four biomarkers (sex steroid hormones, mammographic density, insulin-like growth factor, adiponectin) that are believed to be important in breast cancer development.

Jia-Yi Dong, et.al, (2011);Dietary fiber intake and risk of breast cancer involving 16,848 cases and 712,195 participants. The combined RR of breast cancer for the highest compared with the lowest dietary fiber intake was 0.89 (95% CI: 0.83, 0.96), and little evidence of heterogeneity was observed. The association between dietary fiber intake and risk of breast cancer did not significantly differ by geographic region, length of follow-up or menopausal status of the participants. Omission of any single study had little effect on the combined risk estimate. Dose-response analysis showed that every 10-g/d increment in dietary fiber intake was associated with a significant 7% reduction in breast cancer risk.

III. Objectives of the Study

- To assess the dietary factors contributing to breast cancer in the patients.
- To assess the life style and work pattern of patients suffering from breast carcinoma.
- To assess the awareness about breast cancer among the selected sample.

IV. Methodology and procedure

The sample for the present study comprised of 100 patents of different age group selected by judgment sampling from the hospitals of Srinagar district (SKIMS and SMHS) of Kashmir valley. Tools used for collection of data were structured questionnaire and interview method. Staging of breast cancer was assessed by TNM classification given by American joint committee on cancer. The data collected was subjected to statistical analysis by using mean in order to facilitate analysis and interpretation.

V. Results and Discussion

Table I:Dietary factors / habits of studied sample

Variable	Level	Frequency	Percentage
Red meat and big poultry	Once/ week	20	20.00
	Twice/ week	32	32.00
	Once / month	8	8.00
	No timetable	40	40.00
	Total	**100**	**100.00**
Fish intake	Once/ week	4	4.00
	Twice/ week	9	9.00
	Once / month	21	21.00
	Once / year	66	66.00
	Total	**100**	**100.00**
Fat intake / day	Pure ghee	5	5.00
	Butter	6	6.00
	Milk cream	5	5.00
	Refined oil/mustard oil	84	84.00
	Total	**100**	**100.00**

Smoked fish intake	Once/ week	3	3.00
	Twice/ week	10	10.00
	Once / 2 month	41	41.00
	Never in life	46	46.00
	Total	**100**	**100.00**
Intake of pickle	Once/ day	5	5.00
	Once / week	29	29.00
	Once / month	50	50.00
	Daily twice	16	16.00
	Total	**100**	**100.00**
Variable	**Level**	**Frequency**	**Percentage**
Fresh vegetable intake	1 serving	19	19.00
	3 servings	81	81.00
	6 servings	0	0.00
	Total	**100**	**100.00**
Fruit intake	Yellow fruits	13	13.00
	Citrus fruits	19	19.00
	Other fruiuts	68	68.00
	Total	**100**	**100.00**
Intake of preserved canned food	Yes	46	46.00
	No	54	54.00
	Total	**100**	**100.00**
Intake of milk on daily basis	Once	48	48.00
	Twice	40	40.00
	None	12	12.00
	Total	**100**	**100.00**
Dry fruits	Yes	20	20.00
	No	80	80.00
	Total	**100**	**100.00**
Utensils used for cooking food	Aluminum	66	66.00
	Copper	34	34.00
	Steel	0	0
	Total	**100**	**100.00**

Table I reveals that 40% of females have no time table of taking red meat / big poultry. 32% had twice/week, only 20% consumed once / week and only 8% had once/month. As far as the fish consumption is concerned, it is very less, 66% of females consume once/year, 21% had once/month. The reason of less intake of fish is its difficult pre-preparation, hence less intake of omega-3 fatty acid. 84% of the sample consumed mustard oil only and 16% also take ghee, milk cream in good amount. Smoked fish intake also varies, 46% of the patients never consume smoked fish, only 3% had twice/week . Pickle consumption of once/month is seen by 50% of the patients, 16% consume twice/day. Vegetable intake was 3 servings / day by 81% of the patients. Fruit consumption (citrus and yellow fruits) was very less by only 13% and 19% both are known for its antioxidant properties i.e. vit.c, β-carotene and photochemical. 54% of the patients hadn't

consumed any canned and preserved food. Dry fruit consumption is only by 20% . Utensils used for cooking food was, 66% aluminum, 34% copper but copper utensils are mostly lacquered by aluminum foil, this results in 100% usage of aluminum utensils .

Table II : Life style and activity pattern of studied sample

Variable	Level	Frequency	Percentage
Age group of patents	30-40	32	32.00
	40-50	42	42.00
	50-60	17	17.00
	>60	9	9.00
	Total	**100**	**100.00**
Activity pattern	Sedentary	42	42.00
	Moderately active	58	58.00
	Heavy	0	0.00
	Total	**100**	**100.00**
Exposure to addicted substances	Tobacco	21	21.00
	Cigarette	8	8.00
	Snuff	3	3.00
	Alcohol	0	0.00
	None	68	68.00
	Total	**100**	**100.00**
Exercise on daily basis	Morning walk	30	30.00
	No exercise	70	70.00
	Total	**100**	**100.00**
Occupation	House wife	35	35.00
	Farmer/cultivator	55	55.00
	Employee	10	10.00
	Total	**100**	**100.00**

Table II signifies among the studied group of females 42% were in the age group of 40-50 yrs. 32% in 30-40yrs. 17% of patients were of 50-60yrs. 58% of the patients were moderately active and 42% were sedentary. As exercise is concerned only 30% of patients were habitual to morning walk (30 min. duration). 70% were not going for any exercise except offering prayer (Namaaz) 5 times. Only 3% are snuff users.

Table III: Awareness of patients about breast cancer

Variable	Level	Frequency	Percentage
Breast self examination	Yes	42	42.00
	No	58	58.00
	Total	**100**	**100.00**
Awareness of mammography	Yes	10	10.00
	No	90	90.00
	Total	**100**	**100.00**
Variable	**Level**	**Frequency**	**Percentage**
Person approached first on feeling lump/ bloody discharge in breast	Saints/ peers	17	17.00
	Physicians / doctor	83	83.00
	Total	**100**	**100.00**
Misconception about breast cancer development	Unfortunate	50	50.00
	Evil eye	50	50.00
	Total	**100**	**100.00**
Distribution according to stages of Breast cancer	Stage I	7	7.00
	Stage II A	8	8.00
	Stage II B	18	18.00
	Stage III A	23	23.00
	Stage III B	10	10.00

	Stage IV	13	13.00
	Pagets disease	1	1.00
	Total	**100**	**100.00**

Table III reveals the awareness about breast cancer. 58% of females had never self examined their breast. 42% examined during bathing. 90% of patients had never undergone mammogram and were not aware about it. Only 10% had undergone mammogram before detection of breast carcinoma. 50% of the patients had misconception that the disease is due to evil eye. As per the stage of breast cancer at the time of detection, 38% were in stage IIB, 23% in stage IIIA. 13% in stageIV having metastasis of different organs like skeletal, liver, lung and sacroiliac joint.

VI. Major Findings

Role of dietary factors and life style on breast cancer is a debatable issue. Our studies do not indicate any definite association and it's difficult to arrive at any conclusion.Some of the major findings of the study are:

- Study reveals that 42% (N=100) of the females who were suffering from breast carcinoma were in the age groupof40-50 years. This is followed by the age group of 30-40 years. This shows that at the most young females are affected in the breast cancer.
- The study reveals that 55% of females were moderately active i.e. they were involved in farms and land activities (cultivators), 45% of the females were having sedentary life style, 35% were involved in household work and 10% were desk workers.
- 58% of females have never self examined their breast and mammography.58% of females have never self examined their breast and mammography. 90% of the females don't have any idea about screening) Mammography After 58% of females have never self examined their breast and mammography.) their breast.
- 77% of females found lump and pain in their breast.78% of females didn't found any bloody or abnormal discharge oozing from nipple. After 58% of females have never self examined their breast and mammography. 90% of the females don't have any idea about screening) Mammography) their breast.
- 40% of the females don't have any time table of taking red meat. Most of them take once or twice in a month. 84% of females were consuming P mark, mustered; jumbo for cooking purposes which is not refined oil.16% of females consumed pure ghee, butter, and milk cream in a good amount from their childhood.
- 68% of females consumed all fruits but not on daily basis.19% of females had citrus fruits like lemon, orange, pineapple but not on daily basis.
- Study reveals that only 4%(N=100) of females had fish once/week.66% had once/year.21% of females consumed it once/month. This clearly indicates that omega-3 fatty acid intake was very less.
- 80% of females were using aluminum utensils for cooking purposes.20% used copper utensils.
- Study reveals that 50% of the females thought breast carcinoma development is because of the evil eye(Nazar) 50% thought it is the punishment of evil deeds and unfortunate.50% of them approached saints first for the treatment and had believe that saints are help full in the treating breast carcinoma.50% found that saints can't help it only medicines is the treatment.

VII. CONCLUSION

From the study it is concluded that the maximum number of patients were moderately active. Hence further study is necessary to see whether life style had any effect on breast cancer development. Awareness about breast self examination were found to be zero and patients hadn't heard about mammography before breast carcinoma detection. The people have no concept of dietary management and benefits of fish consumption. Habits of intake of dry and fresh fruits is negligible through they are producers of these fruits. Aluminum utensils are used for cooking purposes which results in many disorders like Alzheimer's disease. It is important to study further whether the usage of aluminum utensils were among the risk factors of development of barest cancer. Females are very shy and not

discussanything about their breasts with doctor though they feel abnormal, and most of females believed it can be cured by saints.

REFERENCES

[1] Key TJ, Allen NE, Spencer EA, Travis RC (2003), Nutrition and Breast Cancer, International journal on nutrition,vol.12(6), Pg No 412-416.
[2] Hites, R et.al. (2004), Science online.
[3] Reynolds.P et.al.(2004), Active Smoking Increases Breast cancer risk, journal of National cancer Institute.
[4] Shrilakshmi. B. (2006), Dietetics, 5:Pg No311-317.
[5] Trock. Bj, Hilakivi Clarke.L, Clarke.R. (2007) year book of Obst.Gynae. and women's health, Pg No243-244.
[6] Bernstein.L, Patel .Av, Ursin .G et.al. (2007): Life time Recreational Exercise activity and Breast Cancer Risk among Black Women and White, year Book of Obstetrics and gynecology and women health:Pg No241-242 .
[7] Monninkhof, Evelyn M.; Elias, Sjoerd G.; Vlems, Femke A.(2007): Physical Activity and Breast Cancer,Epidemiology: Volume 18 (1)Pg No 137-157
[8] Chlebowski,Rowan T. (2011): Vitamin D and breast cancer: interpreting current evidence, Breast cancer research,Vol.13(4)Pg No 217
[9] Wu, A. H. and Butler, L. M. (2011), Green tea and breast cancer. Mol. Nutr. Food Res., Vol.55 Pg No. 921–930.
[10] Jia-Yi Dong, et.al.(2011)Dietary fiber intake and risk of breast cancer: a meta-analysis of prospective cohort studies ,Am J ClinNutr, Vol.94 Pg No900-905