Original Research Article

RISK FACTORS LEADING TO HIGH PREVALENCE OF BREAST CANCER

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ABSTRACT

Breast cancer in women causes psychological and physical distress. It is the most commonly diagnosed female cancer in all cancers. Breast cancer is among the top 20 causes of deaths in Pakistan. It is believed that various factors such as gender, age, socioeconomic status, family history, physical activity, smoking, breastfeeding/lactation, no. of full term and incomplete pregnancies, hormonal and reproductive factors influence the incidence of breast cancer. A prospective as well as retrospective study was conducted on 100 patients in different hospitals of Lahore, aiming to evaluate risk factors leading to high prevalence of breast cancer in women. A questionnaire was designed to obtain patient history, patient complaint and management regarding disease. Females of all age groups were included in the study. The data collected was analyzed and presented in the form of graphs and tables. The results were derived and conclusion presented. Women with advanced age, having middle class family background, higher body mass index and a high ratio of incomplete pregnancies were at significantly increased risk of breast cancer. Obesity and the use of oral contraceptives are minor whereas family history, employment status, physical activity and smoking don't serve as risk factors. The protective role of breastfeeding/lactation and full term pregnancies is suppressed and not very significant.

Key Words: Breast Cancer, Risk Factors

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INTRODUCTION

Cancer is one of those diseases that cause mental and physical anxiety for people. Breast cancer is a type of cancer that mainly affects women. Every one woman has breast cancer in nine. It causes mental stress for women. Breast cancer can be cured in early stages.[1]

Breast cancer starts from the breast tissues. It is divided into two main types: Ductal and Lobular. Ductal cancer is most common type of breast cancer. It originates in that ducts which transfer milk to nipple from breast whereas lobular cancer occurs in the smaller lobules of the breast that are responsible for milk production. [2]

Breast cancer in the early stages has no prominent symptom that's why it is mostly detected in late stages. Symptoms of cancer in the early stage are lumped in breast that not hurt, size and shape changes and fluid discharge from the nipple. In late stages, the symptoms are breast and bone pain, ulcers of skin, swelling and loss of weight.[3]

The tests that are used to diagnose breast cancer are mammography; ultrasound of the breast; breast biopsy and PET scan.[4] There are many factors that depend on the treatment of breast cancer such as stage of cancer, type of cancer and cancer sensitivity to some hormones.

Treatments of cancer are chemotherapy or hormonal therapy, radiation therapy and surgery (mastectomy or lumpectomy).[5]

There are many risk factors that are well written but having a risk factor does not mean that woman has breast cancer or gets breast cancer because many women who have breast cancer but their risk factors are difficult to identify. [6,7] Risk factors for breast cancer include age, gender, hereditary factors/family history, menstrual cycle, having benign breast cancer in life, greater exposure to radiation, lifestyle, socioeconomic status, use of oral contraceptive pills, hormone replacement therapy, obesity, smoking and low intake of fruits and vegetables. [8, 9]

A drastic increase in cancer incidence is occurring and ratio of breast cancer in women is higher. Asia and countries of low risk, there is increased incidence of breast cancer in the past thirty years .[10] US, Canada and Northern Europe have a high incidence of cancer. In Pakistan, Karachi has the highest incidence of breast cancer covering one third of all cancers of females. The ratio is very high in fact highest in Asia. Breast cancer is hitting a large part of the population that's why risk factors are explored that cause high events and mortality of breast cancer.[11] Awareness and knowledge about breast cancer are good strategies for its control. Some studies conducted and proved the desired results.[12, 13]

MATERIAL AND METHODS

A prospective as well as retrospective study was conducted to observe the Risk Factors leading to high prevalence of breast cancer in women. A questionnaire was developed to obtain patient history, patient complaint and management regarding disease. Different hospitals of Lahore (Mayo, Jinnah, CMH, and SKMCH) where breast cancer is being diagnosed and treated were visited and after getting allowance from respective faculties of hospitals a survey was conducted on patients of breast cancer.

Inclusion criteria: Women diagnosed with breast cancer of all age group

Exclusion criteria: Woman with other types of cancer and if she is participating in clinical trial

Duration of study: 2 months

In-depth interviews were conducted with patients by filling the questionnaire. In questionnaire, all demographic and disease related questions i.e. family history (FH), personal history, hormone therapies, socio-economic status and all other factors which may prove as risk factors for breast cancer were studied. Analysis of data was done; results were tabulated and presented in form of graphs. Data was summarized and final results were presented as percentages.

RESULTS & DISCUSSION

Breast cancer is a fatal disease, affecting about one woman in nine. In Pakistan, the most frequently diagnosed cancer among females is cancer of breast (nearly one in five female patients). The incidence of breast cancer is very high in Karachi, probably highest not only in Pakistan but in Asia. In Pakistan the epidemiology of breast cancer is very difficult to describe due to a lack of tumor registry system in Pakistan mainly.

Table 1: Description and Percentage of Risk Factors Observed in population

Risk factors	Description	Percentage
Age	<40 years	28%
	41-70 years	68%
	>70 years	4%
Occupation	Housewives	84%
	Working women	16%
Family History	Yes	8%
	No	92%
Socioeconomic status	High-class	8%
	Middle class	52%
	Poor	40%
Physical Activity	Less active	28%
	Moderate	68%
	More active	4%
Lifestyle	Alcohol consumption	0%
	Smoking	0%
	Addicting drugs	0%
BMI	Under weight	8%
	Normal body weight	44%
	Overweight	32%
	Obese	16%
Sleep Routine	Longer (more than 10 hours)	12%
	Appropriate (8-10 hours)	24%
	Moderate	12%
	Less than 6 hours	52%
Pregnancy/Miscarriage	Full term pregnancy	48%
	Miscarriages	52%
	Abortions	0%
Duration of Breastfeeding	Less than 2 years	72%
	2 years	28%
Use of OCs	Yes	4%
	No	96%

During the survey of different hospitals of Lahore, a data was collected regarding risk factors leading to high prevalence of breast cancer in women. Although there was found a lot of medical

research work on breast cancer for Pakistani women but somehow different epidemiological studies are lacking. The following risk factors were analyzed during study:

Table 2. Percentage of Risk Factors in patients

No.	Risk Factors	% age
1	Miscarriag	52
2	Full tem Pregnancy	48
3	Breastfeeding	72
4	Oral Contraceptive	4
5	Obesity	16
6	Sleep Routine	52
7	Alcohol/ Smoking	0
8	Physical Activity	28
9	Socio-economic status	8
10	Family history	8
11	Occupation	16
12	Age	4

Women with advanced age, having middle class family background, higher body mass index (BMI ≥28) and a high ratio of incomplete pregnancies were at significantly increased risk of breast cancer. 8% females had a family history of disease and belonged to high-class, 28% females were less active after the development of disease, 16% females were working women and none of them were smokers themselves. Therefore family history, physical activity, occupation and smoking (active or passive) were concluded not to be the risk factors for this group of population.

The study contravenes and thus does not support the hypothesis of Collaborative Group on Hormonal Factors in Breast Cancer, that breast feeding reduces the risk of breast cancer. 72% females fed their children for more than one and a half year but still developed cancer. Breastfeeding plays a protective role in women for breast cancer but according to a report of WHO published in 2000 this protective role of breastfeeding may be suppressed due to some other problems or reasons among feeding mothers that should be health related or related specifically to the practice of breastfeeding. However, it is important to consider that no studies have found a harmful effect on breast cancer.

The study also deviates from the hypothesis of Collaborative Group on Hormonal Factors in Breast Cancer, that pregnancies (No. of full term pregnancies >3) may lead to reduced risk of breast cancer. Nearly 90% of observed data females bear more than 3 full term pregnancies and successfully delivered babies. However, despite of the successful full term pregnancies females also show a higher ratio *i.e.* 52% of incomplete pregnancies (miscarriages) and it is thought to serve as a risk of breast cancer.

Higher body mass index (BMI ≥ 28) and age at first full term pregnancy above 25 years are directly related to the risk of breast cancer. 32% of observed data females were overweight. Obesity is another risk factor for breast cancer but this factor has no significance among the tested population as only 16% females crossed the limits for obesity. Sleep routine and working

at night shifts increase the incidence of breast cancer. 52% females had less sleep. Anyhow, these are modifiable risk factors and can be controlled.

Reanalysis of collaborative group on hormonal factors in breast cancer and hormonal contraceptives showed that the use of oral contraceptives (OCs) increases the risk of breast cancer in current and recent users. But this was not a significant risk in studying population because only 4% females use OCs while 96% don't.
The risk of breast cancer is also influenced by a variety of reproductive factors and reproductive habits are susceptible to changes between generations in ways that are quite unpredictable. For our group of population this factor also doesn't serve as a risk may be due to difficulty with recall, illiteracy or ignorance.

Although found a lot of research work but there are many missing facts due to bias recall. 68% of women affected were between the ages of 41-70 years thus there is difficulty with recall of some basic questions as even menopause occurred decades earlier. This led to a great lacking of data. It is also a well known fact that the literacy rate in Pakistani women is very low and some of the results may be attenuated due to this fact also.

In Pakistan breast cancer is among the top 20 causes of deaths and the main reason behind it is ignorance. Many women didn't know about the risk factors of breast cancer. 80% of surveyed population was ignorant about the basic information regarding disease. The high prevalence of breast cancer may be due to many factors including late diagnosis, lack of education and awareness of the disease; females hesitate to disclose the disease in front of male physicians and poverty. The information on education could have been very useful to explain the risks of breast cancer. The public awareness of this fatal disease may help in early detection of breast cancer, decreasing mortality and ultimately increasing the probability of survival.

A pharmacist played its role in management and adjustment of dose but in govt. hospitals there was no active involvement of pharmacist in improving patient's quality of life. Although dose is very precisely adjusted and monitored continuously according to the patient's need but pharmacist in the ward was not visible. Rather, his/her duty was confined only within the vicinity of pharmacy. There was no role of pharmacist in guiding the patient or creating awareness about the risks of disease. At SKMH condition was far better than that of govt. hospitals. The pharmacist was not only present but visible too.

Management of breast cancer in hospitals was of great concern and prime important in oncology wards. The patients were timely diagnosed and their therapy was started. The side effects after were duly managed. Yet the quality of life can be given little more importance. It should be considered as integral part of overall health care. Breast cancer treatments are often accompanied by significant adverse effects. The quality of life is surely affected. There is no doubt the breast loss, fatigue, nausea, sleep disturbances, severe pain and metastasis above all can have a profound impact on the quality of life of a woman undergoing breast cancer treatment. Out of 92% regularly visiting patients only 52% are satisfied while 48% are dissatisfied about their course of treatment. As the patients suffering from proliferative disease there should be psychic guidance and appreciable behavior of physicians and nursing staff. There should also be guidance to patients that early detection of breast cancer guarantees the survival of women.

CONCLUSION

Patients with certain risk factors are more prone to breast cancer. The strongest risk factor for breast cancer is age. Women having middle class background, higher BMI and increased incomplete pregnancies are at greater risk of disease. Obesity and the use of oral contraceptives serve as risk factors to just a minor extent. Family history, employment status (occupation), physical activity and smoking don't serve as risk factors. The protective role of breastfeeding/lactation and full term pregnancies greater than or equal to 3 is suppressed and not very significant. Ignorance of disease and late detection is the major cause of proliferation of disease. Treatment related adverse effects, poor hospital conditions, disappointment from complete recovery and stress of losing life significantly lower the patient's quality of life. Living happily, taking exercise and avoiding smoking (modifiable factors) could lead to low relative risk for breast cancer.

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