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A comparative study of pre – and post-menopausal breast cancer, risk factors, presentation, characteristics

Dr. Iman Ahmed Mahmood[1], Dr. Nada Fezaa Mohammed[2], Dr. Jazaaer Jasim Mohammed[3]
[1-3] Nineveh Health Directorate, Mosul, Iraq

Abstract
Aim: The aim of this study is to assess the prevalence of breast cancer in premenopausal women and post-menopausal women and to determine the related factors among women in Mosul city.
Objective: Breast cancer is the most common female cancer worldwide and is the second most commonly diagnosed cancer in women.
This study evaluates the differences between pre- and post- menopausal breast cancer women regarding risk factors, nature of disease, presentation, tumor characteristics to find out the prevalence of breast cancer, demographic character such as age, parity, family history, hormonal therapy, and history of breast feeding were studied.
Methods: This study is retrospective study done in Mosul hospitals. It is case series study which was carried out among 100 women with breast cancer conducted in breast clinics of Mosul hospitals for a period of 2 years between 2018 -2019, proved by histopathological examination for women who underwent mastectomy, chemotherapy and radiotherapy. They were asked to fill up the forms with their consent and they were collected. Data analysis was done, results, and conclusion were reported in this study.
Findings: Among 100 female's patients taken up for the study, 49 were pre-menopausal and 51 had reached menopause.
The risk factors for both pre-and post- menopausal breast cancer were found similar other than late menopause in post-menopausal patients. Having dense breast tissue was predominant risk factor among all women.
Late presentation was the common phenomenon in almost all patients.
Conclusion: Late stage oat 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 periodic examination for any patient having close relative of breast cancer, after age of 50, and to confirm self-examination for every woman after age of 40.

Keywords: breast, examination, women

Introduction

Breast cancer is the most common female cancer worldwide and it is the second most commonly diagnosed cancer in women after cervical cancer [1].
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 [2, 3].
Risk factors can be divided into unmodifiable risk factors and risk factors related to life style choices.
Unmodifiable risk factors are age, genetic factor, family history, personal history of breast cancer, dense breast tissue, menstrual period, breast radiation early in life.
Risk factors related to life style are: not having pregnancy history or pregnancy at late ages, recent use of birth contraceptive pills, not breast feeding, being overweight or obese, lack of exercise and induced abortion [3, 4, 5, 6, 7, 8, 9].
Menopause doesn't cause cancer, but the risk of developing cancer increases as a woman ages.
A woman who experiences menopause after age of 50 has an increased risk of breast cancer.
The risk is greater if a woman also began menstruating before age 12.
Longer exposure to estrogen increases a woman's risk of breast cancers.
Hence, this study can provide a guide in improving an individual's knowledge about breast cancer and helps to understand more about breast cancer.
The results of this study emphasize the most prevailing risk factors in this population, appropriateness of the diagnostic test used and treatment giver.
This can bring into light the present scenario of the disease and also the specific areas in which special care and precautions are needed to suppress the rising incidence of breast cancer.
The main aim of this study is to evaluate the difference between pre- and post-menopausal breast cancer women regarding risk factors, nature of disease presentation, tumor characteristics.
The study also aim to find out the prevalence of breast cancer, to identify the clinical presentation, risk factors diagnosed methods, and the different type of treatment patterns used.
Menarche and menopause are markers of onset and cessation, respectively of ovarian and related endocrine activity associated with reproduction.
During women reproductive years (broadly the time between menarche and menopause) the ovary produces steroid hormone that directly affect development and function of breast.
Early menarche and late menopause are known to increase women's risks of developing breast cancer.
To assess reliably the strength of these association and whether they vary by tumor subtype or by characteristics of affected women requires large numbers and we address these questions by combining information from many

epidemiological studies, combining individual participant data from many studies not only increase statistical power but also permits similar detentions and similar analytical methods to be used across studies.

Breast cancer has a major impact on academic performance and quality of life, and may bring about limitation in daily activities and work.

The problem may also influence the future job performance, causing a large burden for individual and society.

On other hand epidemiological studies of specific populations are needed to help clinicians and researchers find the factors influencing the frequency of breast cancer.

Despite regional variations breast cancers are a worldwide problem affecting women of all ages, races, income levels and geographical areas.

Breast cancer imposed a recognizable burden on sufferers including substantial personal suffering, impaired quality of life and financial cost, damage family life, social life and employment.

Long term effort of copying with a breast cancer also predisposed women to psychological illness for example depression.

Results

1. Among 100 female's patients taken up for this study, 49 were pre-menopausal and 51 were menopause.
2. 87 of the patients who were diagnosed between the age of 40 and 81 years.
3. 13 patients only who are younger than 40 years were diagnosed.
4. 27 patients who are post-menopausal were diagnosed at age between 50 and 59 years.
5. Only 3 patients who are post-menopausal women below age of 50 were diagnosed.
6. 21 patients at age between (60-81) years were diagnosed.
7. 34 patients of pre-menopausal women were diagnosed at age between 40 and 49 years.
8. 12 patients of pre-menopausal women at age between 30 and 39 were diagnosed.
9. Only one patient of pre-menopausal women was diagnosed at age of 29.
10. Only 2 pre-menopausal women was diagnosed at age above 49.
11. Most of patients (92) presented with lump in breast.
12. Only 8 patients presented with nipple discharge and axillary swelling.
13. Age of menarche at 12 or below number of pre-menopausal patients are 28, number of post-menopausal patients is 45.
14. At age between 13 and14, number of pre-menopausal patients is 21, number of post-menopausal patients is 14.
15. Above age of14, number of post-menopausal patients is 2.
16. Regarding to nulliparous patients, number of post-menopausal patients is 8.
17. Patients with parity (1-2), number of pre-menopausal patients is 4, number of post-menopausal patients is 3.
18. Patients with parity (3-4), number of pre-menopausal patients is 21, number post-menopausal patients is 6.
19. Patients with parity (5-6), number of pre-menopausal patients is 14, number post-menopausal patients is 10.
20. Patients with parity (7-11), number of pre-menopausal patients is 7, number of post-menopausal patients is 20.
21. Patients with parity (12-13), number of pre-menopausal patients is 7, number of post-menopausal patients is 20.
22. Patients with parity (12-13) parity, number of post-menopausal patients is 4.
23. Patients with less than 35 years of menses, number of pre-menopausal patients is 36, number of post-menopausal patients is 9.
24. Patients with more than 35 years of menses, number of pre-menopausal patients is 13, number of post-menopausal patients is 42.
25. Positive family history in pre-menopausal patients found in 8 patients.
26. Positive family history in post-menopausal patients found in 11 patients.
27. Negative family history in pre-menopausal patients found in 40 patients.
28. Positive history of ocp intake in pre-menopausal patients found in 11.
29. Positive history of ocp intake in post-menopausal patients found in 11.
30. Negative history of ocp intake in pre-menopausal patients found in 39.
31. Negative history of ocp intake in post-menopausal patients found in 39.
32. (43) Of pre-menopausal patients are breast feeding.
33. (41) Of post-menopausal patients are breast feeding.
34. (6) Of pre-menopausal patients are not breast feeding.
35. (10) Of post-menopausal patients are not breast feeding.

Table 1: Risk Factor

Risk factor	Pre (N=49)	Post (N=51)	Total (N=100)
Menarche Age (years)			
≤ 12	28(57%)	35(68.6%)	63
13-14	21(42%)	14(27.4%)	35
>14		2(3.9%)	2
Parity Age (years)			
0	3(6.1%)	8(15.6%)	11
1-2	4(8.1%)	3(5.8%)	7
3-4	21(42.8%)	6(11.7%)	27
5-6	14(28.5%)	10(19.6%)	24
7-11	7(14.2%)	20(39.2%)	27
12-13	0(0%)	4(7.8%)	4
Years of menses			
<35	36(73.4%)	9(17.6%)	45
≥35	13(26.5%)	42(82.3%)	55
Family history			
Yes	8(16.3%)	11(21.5%)	19
No	40(81.6%)	41(80.3%)	81
History of OCP			
No	39(79.5%)	39(76.4%)	78
Yes	11(22.4%)	11(21.5%)	22
Breast feeding			
No	6(1.2%)	10(19.6%)	16
Yes	43(87.7%)	41(80.3%)	84

Table 2: Hitopathology

Affected side		Total number (N=100)
Right	60(60%)	
Left	40(40%)	
Histopathology:		Total number (N=100)
Invasive ductal CA	85(85%)	
Invasive lobular CA	15(15%)	

Discussion

Some previous stated that breast cancer is a disease of older

women and its's incidence increases with age, and it is rare below age of 20 years [10, 11, 12].

Majority of patients in this study were between 29 and 81 years old.

A majority of premenopausal patients were in third and fourth decade of their life and majority of post-menopausal were in fifth and sixth decade of their life.

More than 50% of women included in the study were diagnosed after age of 50.

The incidence of breast cancer in this study was found slightly more in post-menopausal women than in pre-menopausal women.

In post-menopausal women majority of them attend menopause after the age of 50 years.

Inconsistent results were publisher regarding age at menarche and breast cancer risk [13].

Some studies reported that younger age at menarche increase breast cancer risk only in pre-menopausal women, while some reported increased risk only for post-menopausal women [11, 12, 13].

In some studies done previously, age at menarche was found to be associated with both pre-and post-menopausal breast cancer, while in another studies, it had no association with either pre or post-menopausal cancer [11, 12, 13].

In this study, early onset of menarche was found to be associated with both pre and post-menopausal patients as the majority of patients in either groups attend puberty at age of 12 years and above.

Late menopause increases the risk of breast cancer in this study.

Risk of developing breast cancer increased in both pre and post-menopausal patients who had early onset of menarche and late menopause possibly due to increase in duration of hormonal exposure.

High parity has generally been associated with low breast cancer risk in previous epidemiological studies [15, 16].

Null parity was associated with an overall increased risk of breast cancer [10].

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.

Practicing breast feeding was believed to minimize the risk of breast cancer in both pre and post-menopausal patients.

The longer the duration of breast feeding by women the greater protection and the risk is relatively reduced by 4% for every 12 months of breast feeding [13].

But in this study, it was found that breast feeding was not protective against breast cancer in both pre and post-menopausal patients, which was conflicting with the majority of the western studies [12].

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 complain of all the women in this study as reported in previous studies [12, 14, 22].

During patient interview, it was found that almost all women found al lump in their breast by their self, but due to lack of knowledge about breast cancer they were not able to detect their disease.

The problem of late presentation us mainly due to rural background, poverty and lack of awareness.

Hence by educating the women about mass on self-breast examination and screening techniques, they can detect their disease by themselves which could also help in early diagnosis of the disease.

The incidence of breast cancer is higher in right breast more than the left.

For the diagnosis of breast cancer, core needle biopsy was done in the majority of patients and positive predictive outcome was obtained from them.

FNAC was done in those patients who were in stage 1 or 2 whose tumor size is comparatively less.

Apart from these tests abdominal ultrasound, chest x-ray, complete blood count, renal function test and cardiac test were done periodically to assess patient condition and also as a part of metastatic workup.

As reported in most of the previous studies, in filtrating duct cell carcinoma was the prominent histopathological type [11, 12, 20, 21].

Other types include lobular carcinoma.

There was no single case of carcinoma in situ is reported.

Treatment of breast cancer should be multi- dimensional and multi-disciplinary in nature and must be given based on the stage of disease.

Optimized treatment can be enhanced when diagnosis is done early.

Majority of patients irrespective to their stage of disease received adjuvant treatment in which surgery was complemented by either chemotherapy, 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 I delays local recurrence, reduces growth of systemic metastasis and prolongs life of patient.

Advanced breast cancer possess enormous management problem because of extensive lesions, which often result in difficult operative and post-operative problems such as flap necrosis, wound infection and early local recurrence of breast cancer.

The treatment of these patients paused a greater problem than anticipated.

Only palliative radiotherapy was offered to patients in an advanced stage.

Patient's recovered well after the treatment despite of the adverse effects, but it had a lot of impact on their wellbeing.

Patients were physically, emotionally and also psychosocially very week mainly due to the lack of proper financial assistance, or poor support from family and poverty.

Lack of proper knowledge about the disease made them make false assumptions and interpretations, which developed a fear among them.

The risk factors for both pre and post-menopausal patients were found similar other than late menopause in post-menopausal patients.

The main reasons for late stage presentation are lack of awareness, poverty and absence of screening modalities, owing to lack of awareness, lack of funding, lack of infra structure, and lack of public health schemes, breast cancer screening, and early detection are not yet available even though there is increasing rate of incidence.

The pre requisites for early detection of breast cancer are cost effective screening modalities along with propagation of self-breast examination and clinical breast examination.

Women should be informed about the benefits and harms of

screening and research should be oriented toward assessing individual's risk and incorporating it to optimize the effectiveness of screening.

This study has certain limitations. First, the prevalence of breast cancer cases was studied rather than the incidence. Second, 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.

In order to reduce the burden of breast cancer, a multi sectorial approach and evidence-based strategies aiming at early detection and effective management of the disease should be implemented. Hence, public health programs that ensure access to appropriate, affordable diagnostic tests and treatment must be introduced.

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