BREAST CANCER SCREENING CAMPAIGN OF 2017 AT AL-MOUWASAT UNIVERSITY HOSPITAL

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ABSTRACT

Objective: This study aimed to show the findings of the breast cancer screening campaign of 2017. **Materials and Methods:** This study was a cross-sectional study of all the women who reviewed the 2017 breast cancer screening program in Al-Mouwasat University Hospital. We included all the women who were tested and examined for breast lesions. Statistical analysis was done using SPSS 25.0. **Results:** Most of the participants were between 41-50 years old with 34.5%, while only 2.3% of all participants were younger than 30 years old which composed the least common group. The distribution of all sample is shown in figure 1. 4.2% of all women had a BIRADS score of 4. **Conclusion:** Breast cancer screening and awareness are extremely important due to the high prevalence and mortality in women. We hope to bring more attention to it and with this article we are showing the importance of breast cancer and the annual screening tests in our country.

KEYWORDS: Breast cancer, Screening program, Syrian women.

INTRODUCTION

Breast cancer is the most common cancer and also the leading cause of cancer mortality in women worldwide. Approximately 1.38 million new breast cancer cases were diagnosed in 2008 with almost half of all breast cancer cases and nearly 60% of deaths occurring in lower income countries.[1] There is a large variation in breast cancer survival rates around the world, with an estimated 5-year survival of 80% in high income countries to below 40% for low income countries.[2]

Low- and middle-income countries face resource and infrastructure constraints that challenge the goal of improving breast cancer outcomes by early detection, diagnosis and treatment.[3] In high income countries like the United States, approximately 232340 women will be diagnosed and 39620 will die of breast cancer in 2013.[4] For an American woman, the lifetime risk of developing breast cancer is 12.38% or 1 in 8 4. The significant decrease in breast cancer-related mortality in the United States from 1975 to 2000 is attributed to continued improvement in both screening mammography and treatment.[5,6] According to the World Health Organization, improving breast cancer outcome and survival by early detection remains the cornerstone of breast cancer control.

Early diagnosis of the disease can lead to a good prognosis and a high survival rate. In North American, the 5-year relative survival rate of breast cancer patients is above 80% due to the timely detection of this disease.[7] Mammography is a widely used screening approach in the detecting of breast cancer and proved to help reduce the mortality effectively. Other screening methods, such as Magnetic Resonance Imaging (MRI), which is more sensitive than mammography, have also been implemented and studied during the last decade.[8] There're numerous risk factors such as sex, aging, estrogen, family history, gene mutations and unhealthy lifestyle, which can increase the possibility of developing breast cancer.[9] Most breast cancer occur in women and the number of cases is 100 times higher in women than that in men.[10,11] Although the incidence rate of breast cancer in America increases year after year, the mortality rate decreases due to the widespread early screenings and advanced medical therapies. Biological therapies have been developed in recent years and proved to be beneficial for breast cancer. Here, we will focus on studies of the pathogenesis, related genes, risk factors and preventions of breast cancer over the past years.

In our country, yearly screening test are done for the early detection of breast cancer. This study is about the results of the 2017 campaign and up to our knowledge this study is the first of its type in Syria.

MATERIALS AND METHODS

This study was a cross-sectional study of all the women who reviewed the 2017 breast cancer screening program in Al-Mouwasat University Hospital. We included all the women who were tested and examined for breast lesions and filled a questionnaire regarding the age, history, examination and the BIRADS score (which was put based on the radiologist opinion), etc. Only the authors to ensure the privacy collected all the data and all the names and personal information were blinded. Statistical analysis was done using SPSS 25.0.

RESULTS

The percentages in Table variables as discussed below are all from the 15 cases of BIRADS 4 to show the effect of different factors on the score.

We only included numbers in the Table and percentages in the text to make it simpler and less complex to understand.

BIRADS or 'BI-RADS stands for Breast Imaging Reporting and Data System. The score is as follows: 0- incomplete, 1-negative, 2-benign findings, 3-probably benign, 4-suspicious abnormality, 5-highly suspicious of malignancy, 6-known biopsy with proven malignancy.
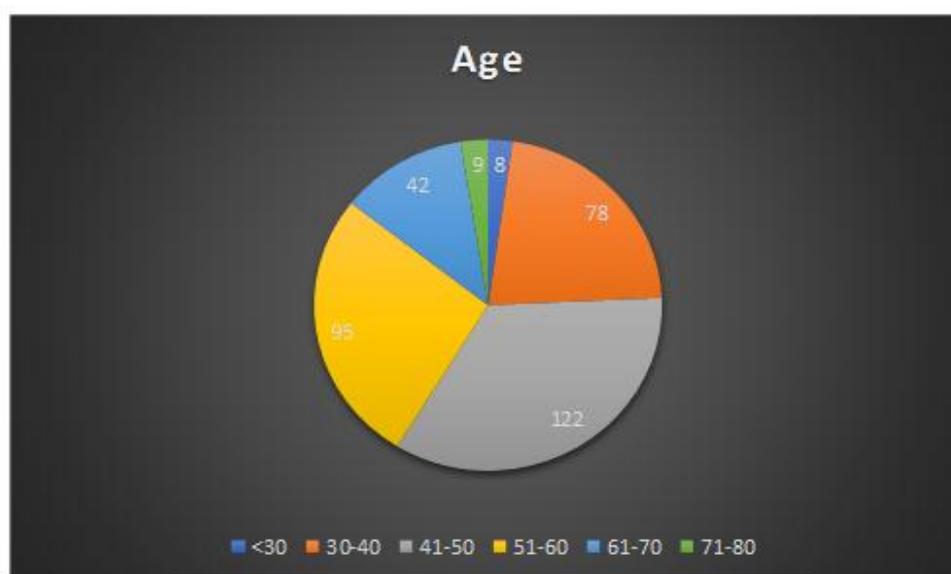

Figure 1: Age of participants in our study.

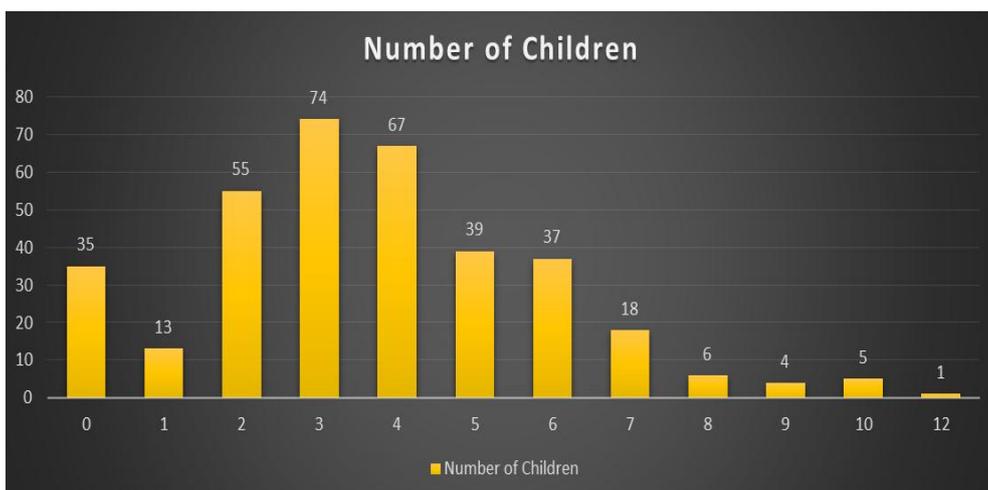**Figure 2: Marital status of participants in our study.**

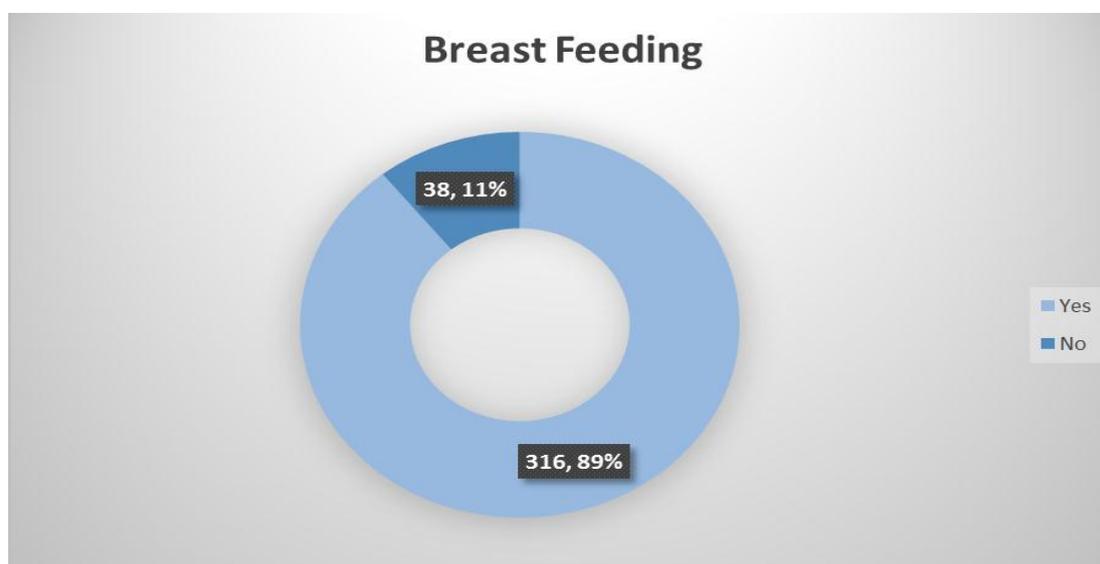**Figure 3: Number of Children of the participants in our study.**

Figure 4: Breast feeding status in the participants of our study.
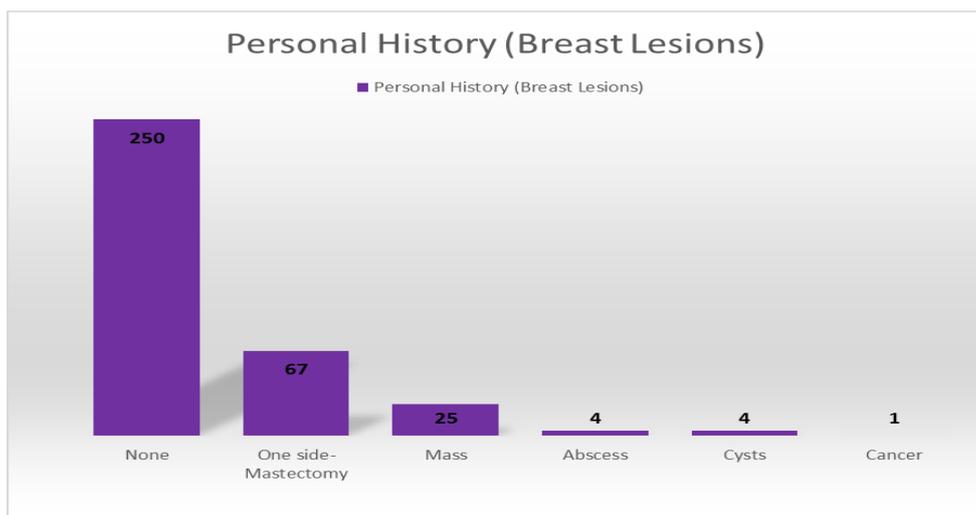
Figure 5: Personal History of Breast Lesions in the participants of our study.
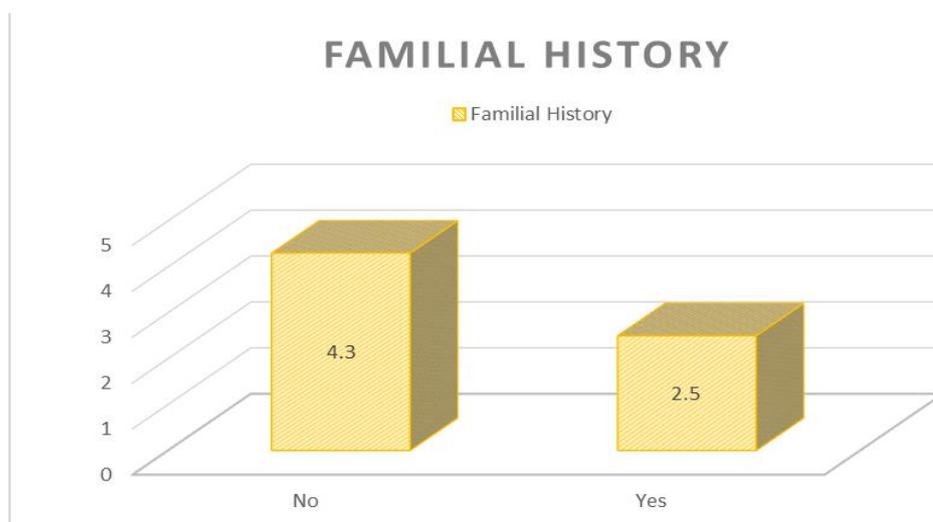

Figure 6: Familial History of Breast Lesions in the participants of our study.
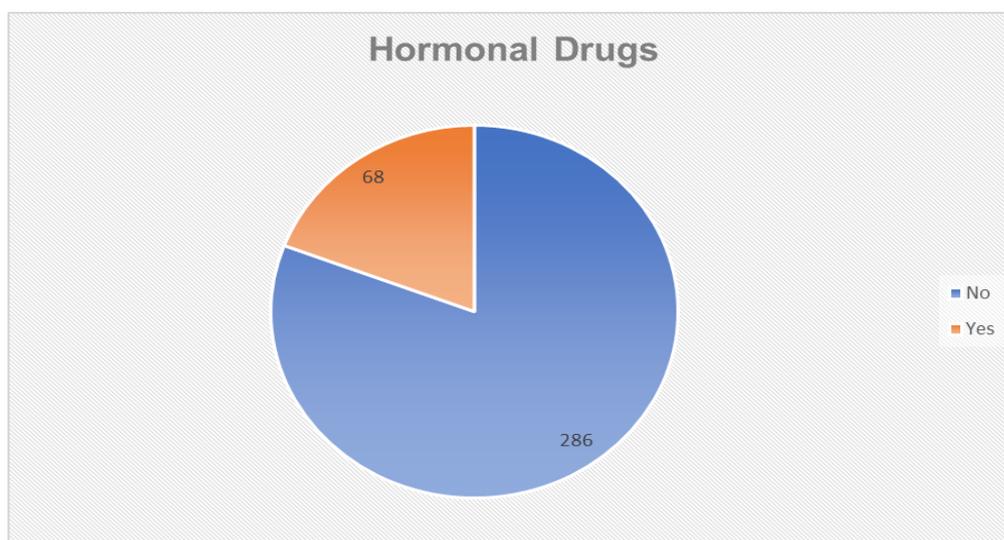

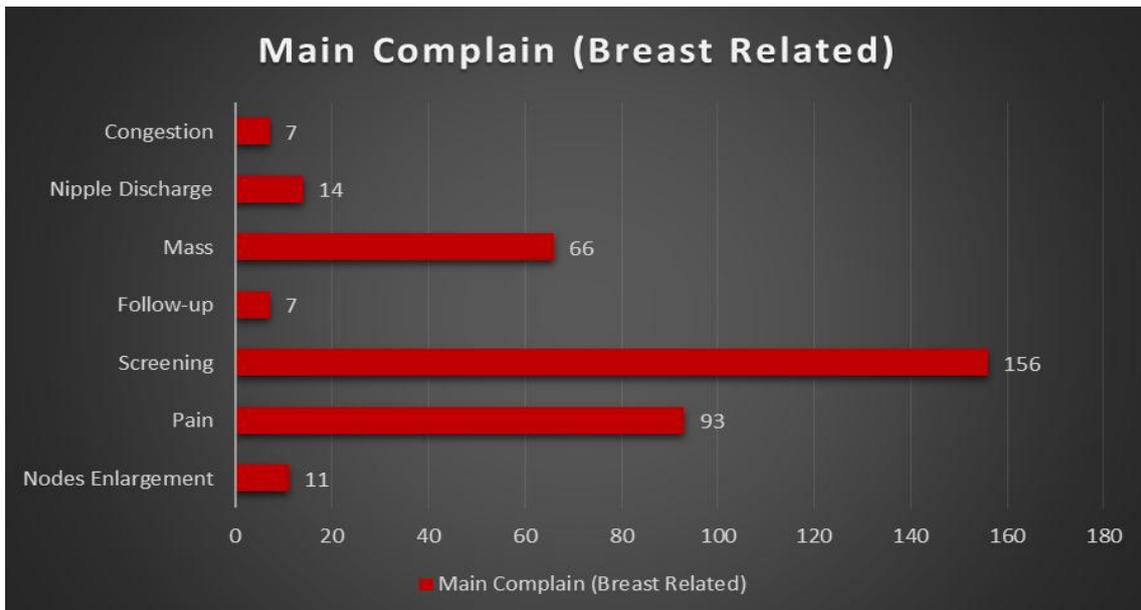**Figure 7: Usage of Hormonal Drugs in the participants of our study.**

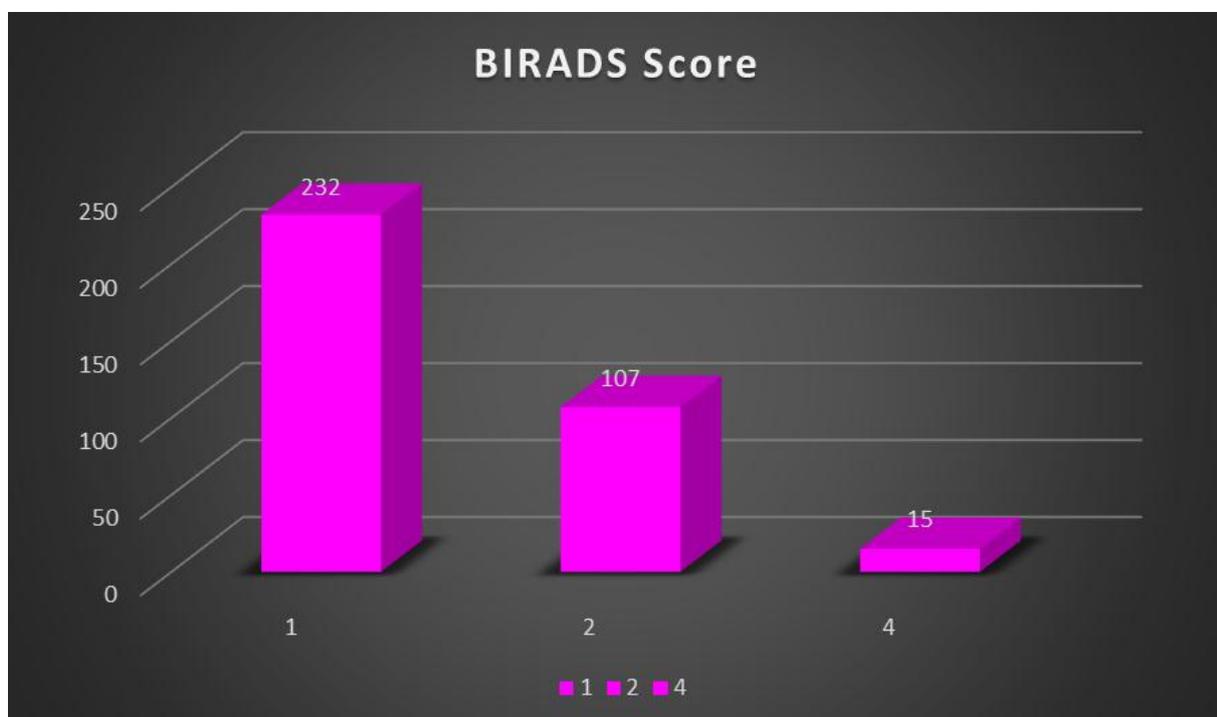**Figure 8: Main Complain (Breast Related) of the participants of our study.**

Figure 9: BIRADS Score of the participants of our study.

Table: Correlation between BIRADS score and Variables in our study.

		BIRADS			Total of all Participants	P Value
		1.0	**2.0**	**4.0**		
Age	<30	7	1	0	8	P= 0.159
	30-40	54	22	2	78	
	41-50	81	36	5	122	
	51-60	55	36	4	95	
	61-70	31	9	2	42	
	71-80	4	3	2	9	
Marital Status	Married	201	102	13	316	P=0.053
	Not Married	31	5	2	38	
Number of Children	0	28	5	2	35	P=0.45
	1	7	3	3	13	
	2	32	21	2	55	
	3	50	23	1	74	
	4	42	21	4	67	
	5	27	11	1	39	
	6	23	13	1	37	
	7	12	6	0	18	
	8	6	0	0	6	
	9	0	3	1	4	
	10	4	1	0	5	
	12	1	0	0	1	
Breast Feeding	Yes	217	88	11	316	P=0.000
	No	15	19	4	38	
Personal History (Breast Lesions)	None	157	86	9	252	P=0.000
	One side- Mastectomy	55	10	2	67	
	Mass	14	9	2	25	
	Abscess	3	1	0	4	
	Cysts	3	1	0	4	
	Cancer	0	0	2	2	
Familial History	No	168	80	13	261	P=0.498
	Yes	64	27	2	93	
Hormonal Drugs	No	179	96	11	286	P=0.028
	Yes	53	11	4	68	
Main Complain (Breast Related)	Nodes Enlargement	2	9	0	11	P=0.000
	Pain	70	20	3	93	
	Screening	125	23	8	156	
	Follow-up	6	0	1	7	
	Mass	20	43	3	66	
	Nipple Discharge	6	8	0	14	
	Congestion	3	4	0	7	
Total of BIRADS Score		232	107	15	354	

Most of the participants were between 41-50 years old with 34.5%, while only 2.3% of all participants were younger than 30 years old which composed the least common group. The distribution of all sample is shown in figure 1. 4.2% of all women had a BIRADS score of 4. (Figure 9).

The remaining demographic variables are shown in the figures and were not mentioned here to brief.

We did not find a statistical correlation between age and BIRADS score, however, we found that 33.3% of patients with a BIRADS score of 4 were between 41-50 years old, 13% of those 71-80 years old had a BIRADS score of 4, while none of those younger than 30 years old had a BIRADS score of 4. (P>0.05) Table.

89% of participants in our study were married. 87% of participants with a BIRADS score of 4 were married, while only 13% with a score of 4 were not married. (P=0.05) Table.

Most of the participants (19%) had 4 children and 26% of those with a BIRADS score of 4 had 4 children. 20% of those with a BIRADS score of 4 had 5 or more children, while 80% had 4 or less children. (P=0.45) Table.

Most of the participants who did natural breast feeding had a BIRADS score of 1 (69%). 27% of BIRADS score 4 results where for those who did not do natural breast feeding. (P=0.000) Table.

4 cases with a score 4 of BIRADS had either a previous surgical removal of a mass in the breast or mastectomy for one breast (2 cases for each). 2 cases who had previous breast cancer had a BIRADS score of 4. (13% of BIRADS 4 score). (P=0.000) Table.

Out of the 15 cases with BIRADS 4 score 14% of them were to women who had a familial history for breast lesions. (P>0.05) Table.

27% of cases with BIRADS score of 4 had a history of hormonal drugs usage (6% of all women who took hormonal drugs had a BIRADS score of 4). (P<0.05) Table.

Out of the 15 cases who had a BIRADS score of 4, 53% of them were just doing a screening test with no complains, 20% had pain in the breast, 20% felt a mass in the breast and 7% were doing a follow up. (P=0.000) Table.

DISCUSSION

Aging is one of the most important risk factors of breast cancer, because the incidence of breast cancer is highly related to the increasing age. In 2016, approximately 99.3% and 71.2% of all breast cancer-associated deaths in America were reported in women over the age of 40 and 60, respectively.[11] Therefore, it is necessary to have a mammography screening ahead of time in women aged 40 or older.

Nearly a quarter of all breast cancer cases are related to family history.[12] Women, whose mother or sister has a breast cancer, are prone to this disease. A cohort study of over 113,000 women in UK demonstrated that women with one first-degree relative with breast cancer have a 1.75-fold higher risk of developing this disease than women without any affected relatives. Moreover, the risk becomes 2.5-fold or higher in women with two or more first-degree relatives with breast cancer.[12]

Late age at first pregnancy and low parity can increase the breast cancer risk. Each additional birth decreases the risk of breast cancer by 5% or 10%, respectively.[13,15]

Both endogenous and exogenous estrogens are associated with the risk of breast cancer. The endogenous estrogen is usually produced by the ovary in premenopausal women and ovariectomy can reduce the risk of breast cancer.[16] The main sources of exogenous estrogen are the oral contraceptives and the hormone replacement therapy (HRT). Oral contraceptives do not increase the risk of breast cancer in women who stop to use them for more than 10 years.[15] A number of studies have shown that the use of HRT can increase the breast cancer risk. The Million Women Study in UK reported a relative risk (RR) of 1.66 between current users of HRT and those who never used it.[17] However, the risk of breast cancer has been shown to significantly decrease after two years of stopping HRT.[18] The incidence rate of breast cancer in America has decreased by approximately 7% due to the reduction in the use of HRT.[19]

Modern lifestyles such as excessive alcohol consumption and too much dietary fat intake can increase the risk of breast cancer. Alcohol consumption can elevate the level of estrogen-related hormones in the blood and trigger the estrogen receptor pathways. A meta-analysis based on 53 epidemiological studies indicated that an intake of 35-44 grams of alcohol per day can increase the risk of breast cancer by 32%, with a 7.1% increase in the RR for each additional 10 grams of alcohol per day.[20,21] Modern western diet contains too much fat and

excess intake of fat, especially the saturated fat, is associated with mortality (RR=1.3) and poor prognosis in breast cancer patients.[22] Although the relationship between smoking and breast cancer risk remains controversial, mutagens from cigarette smoke have been detected in the breast fluid from non-lactating women. The risk of breast cancer is also elevated in women who both smoke and drink (RR=1.54).[23] Up to now, accumulating evidences demonstrate that smoking, especially at an early age, has a higher risk on breast cancer occurrence.[24,27]

Breastfeeding is of particular interest for breast cancer prevention because it is a modifiable risk factor. Breastfeeding not only reduces breast cancer risk but also confers other health benefits to the mother including reduced risk for endometrial and ovarian cancers and reduced risk for chronic conditions that are also risk factors for cancer, such as hypertension and diabetes.[28,29] Additionally, breastfeeding provides many benefits to the infant, including fewer episodes of diarrhea, ear infections, and lower respiratory infections and a lower risk of sudden infant death, diabetes, asthma, and childhood obesity.[30]

CONCLUSION

Breast cancer is the most common cancer affecting women worldwide and is the second leading cause of cancer deaths among women. The development of breast cancer is a multi-step process involving multiple cell types, and its prevention remains challenging in the world. Early diagnosis of breast cancer is one of the best approaches to prevent this disease. In some developed countries, the 5-year relative survival rate of breast cancer patients is above 80% due to early prevention. Mammography remains the mainstay breast cancer screening and detection but magnetic resonance imaging and ultrasound have become useful diagnostic adjuncts in select patient populations.

Authors Contribution

All Authors contributed equally in this study.

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