Breast cancer in Iran

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Abstract: the aim of this investigation was to assess the risk factors associated with the breast cancer and among recently diagnosed cases of breast cancer. In this case – control study, 85 patients with breast cancer between three years period compared with 85 women without breast cancer. The risk factors includes: menarche age, marriage age, first pregnancy age, mean of breast feeding period, history of genital disease, OCP usage, abortion, smoking and addiction, educational level,positive history of breast oozing, painful milk secret in breast feeding period, positive family history of breast cancer malignant, positive history of regular self breast examination before breast cancer . odds ratio and other data analyzed with SPSS soft were positive familial history of breast cancer, smoking and addiction, lack use of self breast examination and painful milk secret in breast feeding period increase the risk of developing breast cancer in our study. The results showed that some of the breast cancer risk factors are preventable, such as changes in life style and regular self breast examination especially about persons with a familial history of breast cancer can influence early diagnosis and prevention.

1. Introduction

All around the world, because of modern technology, life style has been changed and became more sedentary. Consuming higher amounts of fast foods and industrial beverages has been led to obesity and chronic diseases, such as cancer.

Cancer is considered as the third cause of death and breast cancer (BC) is the most frequent (23%) and most fatal form of malignancies among women and is a leading cause of 16% of all cancer – related deaths in women aged 20_59. (1) More than one million cases of BC are diagnosed annually all over the world. Breast cancer incidence rates are increasing in most regions of the world. (2) Changes in life style and mortality reduction from other diseases have been led to increase incidence of BC. Breast cancer is a worldwide major public health problem in women population, affecting both the developing as well as developed countries. (3) Nowadays 1 from 8 American, 1 from 12 European and 1 from 35 Iranian women are at the risk of BC. (4) Annually, about 7000 new cases of BC occur in Iran and 30000 women lose their lives because of BC. (5)

Considering the report of national cancer registry of Iran in 2007, the age specific rate (ASR) for BC incidence was 33/21 per 100000. BC is a heterogeneous disease which is based on clinical and pathological manifestations and responses to treatment.

Family history of BC, early menarche, late menopause, null- parity, and first pregnancy in age over 35 years, are well established risk factors for breast cancer. The breast cancer has been accessed more among the women with recurrent miscarriages and whom taking oral contraceptives. Other research results showed significant relation between smoking and BC.

In Iran, there are few recent analytical studies on the risk factors associated with breast cancer. Knowledge of BC risk factors is necessary to identify groups that are prone to BC and facilitates designation of strategies for primary prevention. Thus, the aim of this investigation was to assess the risk factors associated with the breast cancer and among recently diagnosed cases of breast cancer.

2. Methods

This case control study has been conducted to determine the risk factors associated with breast cancer between 2006 and 2009 in Imam Reza (peace be upon him) Hospital of Birjand. First group included 85 women with the history of breast cancer which were confirmed by pathology. After obtaining consent form, all patients were interviewed by trained health experts and questionnaires were completed for them (The questionnaire has been sent to 10 medical experts in breast cancer before performing the study and their comments were applied in the questionnaire and its content validity has been confirmed). Questionnaire contained questions about the age of menarche, the age of marriage, the age of first pregnancy, number of parity, number of live births, history of abortion, the average duration of breast-feeding of children, medications and contraceptive history, genital system disorders, positive family history of breast cancer, smoking and drug abuse, performance of breast self-examination and clinical manifestation of breast cancer. Control group was included 85 healthy women, without history of BC, who were referred to radiology ward of Vali Asr Hospital in Birjand to do screening for BC.

These two groups were matched in age, occupation and education level. This study was approved by the Ethic Review Board of Birjand University of Medical Sciences.

Collected data was compared and analyzed by one way Anowa test and paired sample t-test and also SPSS software (version 16). The odds ratio (OR), was calculated with a significance level of 5% and a confidence interval (CI) of 95%

3. Results

The average age in case group was $39/2 \pm 12/9$ years. It was $41/8 \pm 14$ years in the control group. In 57 cases (67/1%) cancer was located in left breast, in 24 cases (28/2%) it was located in right breast and in 4 cases (4/7%) it was found in both sides. There were not significant differences in average age, occupation, education level, number of parity, interval between menarche and first pregnancy, the age of menarche, the age of marriage, the age of the first birth, number of live births, the duration of lactation, the interval between menarche and marriage and the interval between pregnancies among both groups. [Table-1 & 2]

Table 3 compares the frequency of risk factors in both groups and estimates odds ratio, confidence interval and P - value. Based on the data in this table, Odds ratio in smoker and addicted women were 4/3 times more than those who did not use cigarettes and drugs (P = 0/05). Odds ratio in women with a positive family history was 13/8 times more than those without

a positive one (P = 0/002). Odds ratio in women who had painful withdrawal of milk during the breastfeeding was 4. 3 times more than those without this event (P = 0/02). In reviewing the following factors there was no significant difference between two groups: taking oral contraceptives, history of abortion, regular physical activity, genital system diseases and low milk during breastfeeding. [Table - 3].

4. Discussion

Regarding this study results, left breast was the dominant side for breast cancer involvement (67/1%) which was consistent in particular with the Kashfi and Bakhtiari studies. (6, 7) Many recent studies showed that smoking and drug abuse could increase the risk of breast cancer (8-11) which were confirmed our results. The Odd ratio in women addicted to drugs and tobacco is determined to be 4/3 times more than non-smokers. Another important risk factor for breast cancer is a positive family history of breast cancer (6, 12-14). In this study, the Odds ratio of women with a positive family history versus those without a family history was 13. 8. The role of fertility dependent factors in breast cancer has been evaluated much more important than socio- economic, psychological and behavioral factors as well as dietary habits. (15) Many studies indicated that the following factors have an effective influence on breast cancer : early menarche, menopause over age 50, marriage, rise of marriage age (> 19 years), the age of first delivery, reduction in number of live birth ($\leq$ 3), reduction in duration of breastfeeding (<24 months), problems during lactation, interval between pregnancies, time interval between last delivery and abortion. (14-18) In this study, only the painful withdrawal of milk during breastfeeding showed a significant relationship with breast cancer but no significant relation was found among remained above mentioned factors.

Regard to the effects of the oral contraceptives on breast cancer, conducted research results was different. Lotfi and colleagues stated the protective effects of drugs. (15) Study by Ozmen and colleagues gave rise to the same results. (13) But some of the researches demonstrated that, consumption of oral contraceptives increases the risk of breast cancer. (19-20) the results of this study showed that there is no significant relationship between the consumption of contraceptives and breasts cancer. The results were consistent with the studies of Holakouei, Marchbanks and Vessey. (11, 21, 22) Early diagnosis of breast cancer is one of the important factors that could make a significant contribution to the effectiveness of treatment. The public health awareness about the disease can also play a big role in preventing the disease. (23) In this study the knowledge of BSE

(Breast Self Examination) was evaluated in order to assess the level of awareness and the performance in patients in their disease. There was a significant difference between the studied groups regarding the Breast self-examination. In control group, it was 4. 3 times more frequent than case group. The study results were quite different from the Yavari's study, may be owing to the selection of control group from healthy women with more attention to their health. (24)

Table 1: frequency of the characteristics of women in case and control groups

variable		control	case	P value
		Count (%)	Count (%)	0/49
Education level	Illiterate	25(29/4)	24(28/2)	
	Elementary school	26(30/6)	20(23/5)	
	Guidance school	8 (9/4)	6 (7/1)	
	High school and Higher	26 (30/6)	35 (41/2)	
work status	unemployed	68 (80)	65(76. 5)	0/68
	Employed	11(12/9)	15 (17. 6)	
	Student	6(7/1)	5(5. 9)	

Table 2: Characteristics of women in case and control groups

variable	control	case	P value
	Mean ± Std. Dev.	Mean ± Std. Dev.	0/26
marriage age (years)	1/1±13/8	1/8±14	0/65
Menstrual age (years)	4/6±18/1	3/6±18/5	0/1
Number of Parity	2/5±4/4	2±3/7	0/25
Age at first birth (years)	3/3±19/5	3/5±20/2	0/49
Number of live births	2/2±3/7	1. 8±3. 5	0/49
The duration of breastfeeding(months)	4/4±21/1	5/4±20/5	0/09
The Interval between menarche and first pregnancy (years)	3/3±5/5	3/6±6/5	0/69
The Interval between Menarche and marriage (years)	4/7±4/5	3/4±4/8	0/92
The Interval between pregnancies (years)	1/2±3/2	1/4±3/1	0/26

Table 3: Comparing frequency and odds ratio of risk factors in case and control groups

Risk factor	case	control	Odds ratio and CI	P value
	Count (%)	Count (%)		
taking oral Contraceptives	45(52/9)	50(58/8)	OR=0/79 CI=(0/43-1/4)	0/59
smoker or addict	8(9/4)	2(2/4)	OR= 4. 3 CI=(1/1-20/8)	0/05
History of breast self-examination	7(8/2)	24(28/2)	0R=4. 38 CI=(1/77-108)	0/001
Abortion	28(35/4)	16(21/3)	OR=2 CI=(0/99-4/1)	0/053
genital system diseases	20(35/5)	17(20)	OR= 1/2 CI=(0/59-2/56)	0/58
Positive family history	12(14/1)	1(1/2)	OR=4. 3 CI=(1/8-11/1)	0/02
low milk during breastfeeding	14(17/1)	5(7/6)	OR=2. 5 CI=(0/58-7/4)	0/09
painful withdrawal of milk during the breastfeeding	13(15/9)	3(4/2)	OR=4/3 CI=(1/18-15/9)	0/02

In reviewing the history of genital diseases no significant difference was found among both groups so revealed discrepancy with results of previous studies (25), perhaps due to low volume of study groups and the patients's lack of awareness of genital disease history and also the differences in the prevalence of genital diseases in different parts of the world. One of the main limitations of this research was the study of confirmed patients who referred for the treatment instead of the new patients, due to the low number of new ones and on the other hand, inevitable prolongation of the study by adding the new cases. Although objectivity of researchers have attempted with a deep questioning to collect the required information, but due to the length of time from diagnosis to treatment the recall bias has been occurred in case and control groups. Therefore it is recommended that in subsequent studies for further validity of the research, use cases that recently have confirmed diagnosis and underwent treatment.

Considering that some risk factors such as changes in lifestyle are preventable for breast cancer. Following measures could be very useful for prevention of breast cancer: improving the knowledge and awareness of the society about the risk factors such as smoking and drug use especially among those with a positive family history of breast cancer, attention to perform breasts exams and early visit by physician.

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