

Prevalence of Breast Cancer in East-Azerbaijan of Iran

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Abstract: Cancer is a leading cause of death worldwide with about 7.6 million deaths in 2008. Breast cancer is the most frequent cancer among women and the most common cause of cancer death. This study is a mammographic screening study on 1000 women who came to a radiology center in Tabriz at 2010. The screening technique included physical examination of breasts by an experienced physician before taking mammograms and then mammography in two standard views. 1000 women between ages 40-77 years old and without any clinical symptoms was evaluated. Malignant mass or nodule: 13 cases, Benign mass or nodule: 34 cases, Benign calcified nodule: 10 cases, Fatty breast: 6 cases and Ductal ectasia: 1 case. Association between malignancy signs in mammography and positive clinical findings doesn't have statistical significance ($P=0.405$) and association between benign signs in mammography and clinical findings doesn't also have statistical significance ($P=0.692$). Varying in prevalence of breast cancer in different studies suggests that many factors more than those we think about them as same as: ages, family history, first pregnancy, menarche age, gravity, breast-feeding have rules in breast cancer prevalence and these should will be studying in others analytic studies to know about these factors and ways to decrease them and ultimately breast cancer mortality.

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1. Introduction

Breast cancer is the most frequent cancer among women, and it is also the most common cause of cancer death in both developed and developing regions (Ferlay, 2010). Breast cancer is a major problem for global public health. Breast Cancer is the most common incident form of cancer in women around the world. The incidence is increasing while mortality is declining in many high-income countries. The last decade has seen a revolution in the understanding of breast cancer, with new classifications proposed that have significant prognostic value and provide guides to treatment options (Boyle, 2012). Breast cancer is also the most common cancer in Iranian women and vast majority of patients in Iran are diagnosed in advanced stages (Harirchi, 2011). Iranian breast cancer patients are younger than the patients in western countries (Ebrahimi, 2002). Cancer is the third leading cause of

death in Iranian population (Yavari, 2008). Geographical variations in incidence and mortality rates of breast cancer suggest that the known risk factors for breast cancer may vary in different parts of the world and that environmental factors are of greater importance than genetic factors (Mc Pherson, 2000). Although breast cancer is an important health problem in Iran, Epidemiologic data isn't sufficient for this problem. For this reason, we conducted this mammographic screening study to determine the prevalence of breast cancer in East-Azerbaijan, a northwestern province of Iran.

2. Material and Methods

This is a mammographic screening study that performed in the Tabriz University of medical sciences at 2010. 1000 women who came to a radiology center in Tabriz (capital of East Azerbaijan province in Iran) were selected. The sample was

chosen among patients without any clinical symptoms who were referred for a general check-up or for initiating hormone replacement therapy or for follow-up after initiating hormone replacement therapy.

The screening technique included physical examination of breasts by an experienced physician before taking mammograms and then performing screening mammography in two standard views: craniocaudal (CC) and mediolateral-oblique (MLO) view.

A radiologist read the mammograms and any kind of abnormal findings were recorded. If there was any need, the patients were referred for further evaluation or to a surgeon for a biopsy. In the mammograms with abnormal findings the involved quadrant of breasts were recorded and association between the malignant and benign signs of mammograms and involved area of breast was evaluated. The association between the results of physical examination of breasts and results of mammograms was analyzed. In the sample the frequency of malignant and benign masses or nodules in different age groups was calculated.

Ethical considerations

This study was in perfect compliance with privacy protection, and all patients' information is completely confidential and their name and specifications have never been revealed.

3. Results

1000 women between ages 40-77 years old and without any clinical symptoms were evaluated. The frequency of age groups in the sample is shown table 1.

The results of the screening mammography in the sample were as follows:

Malignant mass or nodule: 13 cases, Benign mass or nodule: 34 cases, Benign calcified nodule: 10 cases, Fatty breast: 6 cases and Ductal ectasia: 1 case. Frequency of malignancy in different age groups was shown in Table 2.

Table 1. The frequency of age groups of samples

Age Range in year	Percentage
40-49	43.6%
50-59	41.8%
60-69	12.8%
>70	1.8%

In malignant cases 38.46% had negative clinical exam and 61.53% had palpable nodule or mass in the physical examination. Among the cases that had a benign nodule or mass in mammography 50% had a positive physical examination and 50%

had a negative physical examination. Association between malignancy signs in mammography and positive clinical findings doesn't have statistical significance (P value=0.405) and association between benign signs in mammography and clinical findings doesn't also have statistical significance (P value=0.692).

In cases that had normal mammography 12.4% had signs of auxiliary lymphadenopathy, bloody secretions, glandular hyperplasia, pain in palpation or depressed nipple and pain in palpation of the breast is the most prevalent sign.

Table 2. Frequency of malignancy in different age groups

Age Range in year	Number of cases	Percentage
40-49	3	23%
50-59	8	61.5%
60-69	1	7.7%
>70	1	7.7%

Association between secretions and malignancy was evaluated. In cases that secretions were present 96.2% had normal mammography and 3.8% had benign nodule or mass without any statistical significance (P value = 0.975)

In the cases, which had signs of malignancy in mammography, the most involved anatomical location was the upper outer quadrant. (P value=0.018) In whom there were signs of a benign nodule or mass in mammography the most involved anatomical location was also the upper outer quadrant (P value=0.113).

4. Discussions

There is no way to breast cancer prevention though early diagnosis with screening mammography is the best intervention to reduce Breast cancer mortality. Recently, a review of six case-control studies confirmed a breast cancer mortality reduction ranging from 38% to 70% among screened women (Puliti and Zappa, 2012). In this study the breast cancer prevalence was 13 in 1000 patients and 5-20 with CI 95%.

Haikel and et al in 2012, reported 4.2 cases of breast cancer per 1000 examinations in a rural county in Brazil with screening mammography. The number of cancers detected was significantly higher in women aged 60 to 69 years than in those aged 50 to 59 years ($p < 0.001$) or 40 to 49 years ($p < 0.001$). No difference was observed between women aged 40 to 49 years and those aged 50 to 59 years ($p = 0.164$) (Haikel, 2012).

But we couldn't find any association between patient's age and menarche age with breast cancer.

Li and et al in 2012, reported suspicious breast cancer 0.2% among women aged 30 to 59 years old in China by clinical examination and mammography (Li, 2012).

Skovajsová and et al in 2012, reported 14914 breast cancer among 3056 907 women (0.48%) aged 45-69 that goes to mammographic screening between 2003-2010 (Skovajsová, 2012).

In the cases, which had signs of malignancy in mammography and, whom there were signs of a benign nodule or mass in mammography the most involved anatomical location was the upper outer quadrant.

Elisabeth Bräutigam and et al in 2009, reported that Between 1089 patients presenting with a invasive carcinomas, 707 presented with tumors in the lateral quadrants, 294 with tumors in the medial quadrants, and 99 with tumors in the central quadrant (Bräutigam, 2009). There is no association between the ages of first pregnancy, breast secretions, and number of Childs, breast-feeding with breast cancer incidences.

Vera-Ramirez and et al: Diet has attracted considerable attention, as it is a modifiable risk factor and thus offers an opportunity to design preventive strategies. Nevertheless, only alcohol consumption has been unequivocally related to increased breast cancer risk. Despite the failure of observational studies in human populations to clearly define the nature of the relationship between specific nutrient exposures and breast cancer risk, in vivo and in vitro studies strongly suggest its existence. Moreover, studies at the molecular level have identified the putative action mechanism by which the nutritional constituents of specific foodstuffs may exert protective or enhancing effects with respect to breast cancer risk (Vera-Ramirez, 2010).

Kristbjornsdottir and Rafnsson reported that there are indications of an exposure-response relationship, as the risk of breast cancer was higher in residents of warm reference area in comparison with the cold area. Social status has been taken into account and data on reproductive factors and smoking habits show that these do not seem to explain the increased risk of breast cancer, however unknown confounding cannot be excluded (Kristbjornsdottir and Rafnsson, 2012).

The frequency of patients with Cancers increased with age in both sexes (Yavari, 2008).

Hajian-Tilaki and Kaveh-Ahangar in 2011 in Iran reported that having higher age at first pregnancy and abortion were associated with

increased breast cancer risk (the adjusted OR = 4.1, 95% CI: 1.3-13.2 and 2.93, 95% CI: 1.64-5.24, respectively) (Hajian-Tilaki and Kaveh-Ahangar, 2011). By increasing parity, the risk had reduced significantly; among women with parity ≥ 5 , the adjusted OR was 0.09 (95% CI 0.01-0.7) compared with nulliparous women, and also for each additional parity, the risk reduced by 50% (OR = 0.50, 95% CI: 0.34-0.71).

The duration of breast-feeding was inversely associated with breast cancer risk, while after additional adjustment for parity, no longer the protective effect of breast-feeding was observed. Nullparity, late age at first birth and abortion were the most important reproductive factors associated with breast cancer risk; therefore, it is recommended to women with these risk factors to perform breast cancer screening tests earlier (Hajian-Tilaki and Kaveh-Ahangar, 2011).

There is no difference between right and left breast in the rate of malignant or non-malignant mass. The most common finding in people with normal mammogram was pain in palpation without any mass ($p=0.00$). Positive or negative physical exam before mammography couldn't rule out presence of malignant or benign mass.

5. Conclusion

It seems prevalence of breast cancer in this study is more than another studying and another studies results also different together, also varying results about effective factors suggests that many factors more than those we think about them as same as: ages, family history, first pregnancy, menarche age, gravity, breast-feeding have rules in breast cancer incidences and prevalence. Despite the generally accepted idea that breast cancer risk factors are similar worldwide other factors as same as gene and diet and other environmental factors as same as diet, temperature... may alter their importance as causal factors, and results from studding on Caucasian patients may not be applicable in patients in Iran due to differences in tumor biology/profiles, metabolism of drugs and also health beliefs, though we should plan another analytic studies to know about these effective factors in Iranian people and ways to decrease them and ultimately breast cancer mortality..

Suggestions:

According to the results of this study and other studies, it is recommended to provide the possibility of self-examination studying with TV and odder media and gradually moving towards national mammography programs in Iran disseminated through the media with government support.

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