The association between abortion and risk of breast cancer in Iranian women

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Abstract

Introduction: Breast cancer is the most common carcinoma among women in developing countries. Although breast cancer is a systematic disease and common in American females, the risk factors have not been discovered perfectly. There are many studies about the relation between breast cancer and factors dependent on sexual hormones such as oral contraceptive pills, the age of first period, first parity and menarche, duration of lactation regularity of period and abortion but scientists are not unanimous about them and controversy exists over the possible relationship between induced and spontaneous abortion and risk of breast cancer.

Materials and Methods: Cases are 216 females (mean age 48.2) with a pathological diagnosis of breast cancer after 2000 admitted in Omid hospital from Feb. 2002-2005 in Mashad.

Controls are 427 females aged more than 30 (mean age 52.4) admitted in the different wards of Gaem and Imam Reza Hospitals in Mashad.

198 females with breast malignancy had the history of abortion; this figure is 427 for controls with history of abortion.

Result: Our findings support the hypothesis that abortion does not represent substantive risk factors for the future development of breast cancer (OR=0.78; p value=0.7006)

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**Conclusion:** Even there are a few hospital-based studies about risk factors of breast cancer in Iran, it is the most common malignancy among Iranian women and the incidence of it increases yearly and it is a fatal disease and environmental and hormonal dependent so findings the risk factors of it has different benefits and its risk factors should be examined in a large retrospective and prospective studies and further research should concentrate on investigating any relationship between sexual hormone factors and breast cancer.

**Introduction**

Breast cancer is the most common carcinoma among developing countries’ females and physicians usually visit such patients in their clinics. However it stands after lung cancer in developed countries. Unfortunately breast cancer has preceded the lung cancer in mortality rate.

Although breast cancer is a systematic disease and common in American females, the risk factors have not been discovered perfectly.

As indicated from statistics breast cancer is a common problem among Iranian females (20%).(1)

There are many studies about the relation between breast cancer and factors dependent on sexual hormones such as oral contraceptive pills, the age of first period, first parity and menarche, duration of lactation, regularity of period and abortion but scientists are not unanimous about them.

Today breast cancer is known as a systemic disease with invasion to all parts of the body.

Although there is a huge improvement in methods of diagnosis and treatment of breast cancer, it is a fact that prevention is better than treatment, so the causes of this disease must be found and our attempts lead us to rescue patients. Therefore the sooner we diagnose it the longer patients live.

One of the most disturbing diseases that have struck women nowadays is breast cancer. In rare instances, breast cancer can develop in men, but the vast majority of cases are in women. There is a clear association between the development of breast cancer and increasing age, with 80% of cancers occurring in women more than 50 years of age and one-third in women over 70 years.(2)

Generally, incidence of breast cancer is high at all time, affecting as many as one in eight women. About a third of those will die from it. It is second to lung cancer among the death-causing cancers and unfortunately, total number of breast cancer cases for women of all ages is expected to more than double over the next 26 years.

Approximately 1.2 million people have been diagnosed with breast cancer in 2007. Only about 2000 of these will be men. What may surprise you is that breast cancer is increasing among both women and men in the United States and About 12.5% of American girls are exposed to the breast cancer and this rate have become twice since 1940. (3)

In England and Wales the breast cancer rate is expected to rise by over 2% per annum between now and 2023-some 60%- among women aged 45 to 49.(4)

In the developed countries, despite access to regular mammary exams and excellent treatment regimens, many of those who develop breast cancer will die. Unless there is a major improvement in treatment, including a reduction in the waiting-lists, the
A personal history of breast cancer or benign breast disease
- Taking treatment with radiation therapy to the breast/chest
- Hormones such as estrogen and progesterone (5,6)
- Drinking alcoholic beverages
- Smoking in younger age boosts women's breast cancer risk
- Strong evidence of a genetic determinant for mammographic density, a major risk factor for breast cancer.
- Young, black women at higher risk of aggressive breast cancer (7)
- Abortion

Several studies found an increase in breast cancer developing after abortion in women. There are many studies that demonstrate no increase in developing of breast cancer after abortion. (4) If abortion is accepted as a greatly increased risk of breast cancer in succeeding years it poses many dangers to the mother and in the developing world, breast cancer is a death sentence. It is illustrated from Iranian cancer registry that the incident of breast cancer in Iranian women is about 80/100000.

If statistical data are accepted as point estimation and the number of Iranian women more than 30 years old are estimated about 1000000, the incidence rate of breast cancer in Iranian females is 5000-8000 every year so breast cancer has emerged as the most frequent malignancy among Iranian females. (8)

We all know someone who has been affected by breast cancer while we don't know how to prevent it. Because breast cancer is an invasive disease and its survival is not long so attention to its risk factors is more important to save females.

Over recent years, concerns have been raised about a possible causal relation between induced abortion and
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subsequent breast cancer. The abrupt hormonal changes associated with termination of pregnancy may induce changes in breast epithelial cells at a stage when they are not fully differentiated and therefore more vulnerable to later development of breast cancer. However controversy exists over the possible relationship between induced and spontaneous abortion and risk of breast cancer.

It is a fact that repetition of results shows a strong link between cause and effect, furthermore incidence of breast cancer is not the same in different races and debate continues over the possible relationship between abortion and risk of breast cancer. Thus, the association of fatal breast cancer and abortion was examined in this study to justify warning women of future breast-cancer risk when counseling them about abortion.

It has been hypothesized that surgical and spontaneous abortions increase breast cancer risk. However, the largest and most reliable research studies show that there is no association between either kind of abortion and risk of breast cancer.

For almost a decade, much of the medical establishment has firmly resisted the overwhelming evidence that there is a link between induced abortion and a heightened risk of breast cancer. Though some studies have suggested that abortion increases the risk of breast cancer, many of these were severely flawed and their results are not valid.

In 1997 researchers in Denmark published the results of a large, well-done cohort study of abortion and breast cancer risk. This study, which included data on 1.5 million women, avoided the problem of reporting bias by relying on data collected from abortion registries (i.e. medical records) rather than individual reports. This study found no association between induced abortion and breast cancer risk; women who had abortions were no more likely to develop breast cancer than women who had not had abortions.

Several other recent studies have also found no association between abortion and breast cancer risk, including two studies conducted in China. Another study does not support the hypothesis that miscarriage or induced abortions represent substantive risk factors for the future development of breast cancer.

Finally, a recent case-control study in Sweden found a 16% decrease in the relative risk of breast cancer in the group that had had abortions. This well-done study used medical records to determine which women had abortions.

There is a review article that examines the published evidence supporting and refusing this hypothesis and concludes that there are, to date, insufficient data to justify warning women of future breast-cancer risk when counseling them about abortion.

Methods and Materials

The evidence for this association was evaluated in a population based case-control study in Iran (Mashhad).

Cases were selected from women more than 30 years old with breast cancer diagnosed after 2000 admitted in Omid hospital in Mashhad.

The cases were matched randomly for age with admitted patients in different wards of Gaem and Imam Reza Hospital such as: surgery, gynecology, ophthalmology, orthopaedy, and otolaryngology.

In these study, the researchers spent 5 minutes for patients, explained the aim of research for both cases and controls.
and after their permission asked women about their ages and whether they had had abortions (induced or spontaneous abortion) and how many abortions they had. However they did not verify the self-reports with medical records. 

216 cases and 456 controls were asked during Feb. 2002-2005. 

Data were analyzed by statistics program (SPSS 9.01 and EPI 6.04) and we use T-test for confirming the relationship between nominal variation and breast cancer.

**Result**

In this study we assessed the link between breast cancer and abortion (induced and spontaneous abortion).

The study included 216 cases with mean age 48.2 and 465 controls with mean age 52.4.

198 females with breast malignancy had the history of abortion and this figure is 427 controls with history of abortion.

Our findings support the hypothesis that abortion does not represent substantive risk factors for the future development of breast cancer (OR=0.78; p-value=0.7006)

This study indicates that lack of abortion does not have protective role for breast cancer.

**Conclusion and Suggestion**

Findings are achieved from this study to some extent is similar to previous researches which are on the belief that there is not a relationship between breast cancer and abortion.

Although in this attempt we find that pregnancies that end as a spontaneous or induced abortion do not increase a woman's risk of developing breast cancer there are controversies over the possible relationship between induced and spontaneous abortion and risk of breast cancer in previous study. (15)

Even there are a few hospital-based studies about risk factors of breast cancer in Iran, it is the most common malignancy among Iranian women. (1)

In this study our attempt was to match cases and controls in every respect so they were selected according to the inclusion and exclusion criteria from three hospitals in Mashhad.

Omid hospital is a general hospital for malignant diseases and the others are general hospitals.

As indicated, breast cancer is a common disease among females, its incidence increases yearly; it is a fatal and environmental disease and also hormonal dependent. So finding its risk factors has different benefits:

First, by discovering changeable factor we can reduce the incidence of breast cancer.

Second, finding unchangeable factors helps us to concentrate our study over primary and secondary prevention stages.

Third, studies on discovering risk factors of breast cancer are more cost-effective than treatment.

As indicated before, there are not huge study about risk factors of breast cancer in Iran and this study is one of the limited analytical researches in Iran and we did not assessed the link of breast cancer.
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cancer and induced abortion or spontaneous abortion separately so the association of fatal breast cancer and induced and spontaneous abortion should be examined in a large retrospective and prospective studies and further research should concentrate on investigating any relationship between induced or spontaneous abortion.

References
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