Prevalence of Breast Cancer in a Defined Population of Iran

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Abstract

Background: Prevalence of breast cancer in Asian developing countries is much lower than western developed countries. The main aim of this study was to measure breast cancer prevalence in a defined population of Iran.

Methods: A total of 25201 women who were under coverage of “Imam Khomeini Relief Foundation (IKRF)”, which is an organization for delivering supportive social and cultural services to the deprived and poor subgroups of the society, were involved in the study. The study was conducted during years 2007 and 2008. All subjects were interviewed for their socio-demographic features and underwent precise clinical and para-clinical breast examination.

Results: Mean age was 47 years with standard deviation 10 ranging from 11 to 88 years. Subjects were from deprived subgroups of the community; were mainly illiterate or had primary school education (86%) and majority of them (93%) had their first full-term pregnancy at age less than 26 years and also were multiparous. With confirmed diagnosis by breast biopsy, breast cancer prevalence was 0.15% (95%CI; 0.10-0.20).

Conclusion: Compared with developed countries, Asian developing countries have been at a lower risk of breast cancer development. It is seen that more deprived subgroups are at much lower risk. The more industrialized life is accompanied with more hazards.

Keywords: Prevalence; Breast cancer; Household women; Iran

Introduction

Breast cancer is the most frequently diagnosed malignancy among women in developed countries, and in some developing countries. Breast cancer is more prevalent in developed western countries than in developing Asian countries. Investigations have revealed that almost one in nine American women will suffer from breast cancer in their lifetimes, while the Western European and North American population have the highest lifetime risk. Prevalence of breast cancer in these countries is estimated between 8 and 10%. However, the lowest prevalence is seen in Asian countries, about 1%. In Iran, the prevalence of breast cancer was reported to be 6.7 per thousand in 2002, which is less than the estimates for Asian countries. Several reports from Iran have reported that the prevalence of breast cancer in Iran is lower than in European and American countries but they did not report an exact measure.

Breast cancer usually occurs at the time when women have important family and occupational roles, and thus any treatment in relation to this cancer would be particularly stressful for the patient and her family. Disparities in the prevalence of breast cancer have long been debated. As mentioned before the prevalence of breast cancer is low in Iran. The main aim of this study was to measure the prevalence of breast cancer in a specific group of women from low social class and deprived subgroups of Iranian population.

Materials and Methods

A total of 25201 women who were insured by the “Imam Khomeini Relief Foundation (IKRF)” were involved in this study. The “Imam Khomeini Relief Foundation (IKRF)” was established in 1980 in Islamic Republic of Iran for delivering supportive services to the deprived and poor subgroups of the society.
social and cultural services to deprived and poor sub-
groups of the society. Thus women in this study were
mainly Vulnerable Household Women’s Health As-
essment (VH-WHAT) from poor and low social
subgroups.13 This study was conducted during a two
years period from 2007 to 2009.

Islamic Republic of Iran, in the Middle East region
with an over 70 million population, consists of 30
provinces with Tehran as its capital with more than
10 million residents. Along with Tehran, 10 more
province capitals including: Shiraz, Mashhad, Ker-
man, Kermanshah, Bushehr, Qom, Isfahan, Gorgan,
Rasht and Yazd were included in this study.
The statistics and number of vulnerable women
was obtained from the provincial public service or-
ganizations (IKRF). Population size of each province
capital was determined according to its population
and allocated budget.

All of the subjects were first interviewed for
socio-demographic data, drug history and history of
cancer. Selected gynecologists and surgeons attended
educational workshops to be oriented regarding the
principals of a concise breast examination. Then in
the appointment day, a gynecologist or surgeon per-
formed a complete breast examination to detect any
lump or mass along with axillary lymph node exam.
All participants in the range of 35 to 60 years then
referred to designated radiology centers for mammog-
raphy. For those women above 60 or below 35 years
of age, mammography was done according to physi-
cian’s opinion and results of breast examination.

In some cases with suspicious results of mammog-
raphy, a breast ultrasonography was performed to
evaluate any abnormal mass or lumps; in presence of
any cystic lesion it was aspirated by needle. All sus-
picious breast masses underwent biopsy for detection
of malignant lesions and the breast cancer diagnosis
was confirmed by the result of biopsy. All analysis
was conducted using Stata v10.

Results

Mean age of the population study was 47 years with
standard deviation of 10 years, ranging from 11 to 88
years. Only 2% were single while 19% were married
and 79% were divorced or widowed women. Fifty
eight percent reported their menarche at age 13 years
or less and the rest at 14 years and above. Age of
marriage at age 26 years or above. Fifty five percent had
their first pregnancy at age 18 or less and 37% be-
tween age 19 to 25 and only 8% at age 26 years and
above. Eighty eight percent were unemployed and
received their life expenses from IKRF. Forty percent
were illiterate and 47% had only primary school edu-
cation and only 3% had university education. Forty
six percent had never used OCP, 47% had started to
use OCP between ages 20 to 30 years and 7% at age
above 30 years. However, duration of OCP use was
not clear for the two last groups (Table 1).

Number of pregnancies was significantly associ-
ated with diagnosis of breast cancer and those with a
higher number of pregnancies were less likely to be
diagnosed with breast cancer. Marital status, men-
arche age, age of marriage, age at first pregnancy,
occupation and education were not associated with
the disease diagnosis.

About 1% of subjects had history of radiation ex-
posure and 6% had reported hormone therapy before
the time study and these two factors were not associ-
ated with the disease diagnosis. Positive family his-
tory of both breast cancer and ovarian cancer was
about 3%. Also family history of breast and ovarian
cancer were significantly related and those with fam-
ily history of one cancer were more likely to have
family history of another. Eighteen percent of breast
cancer patients had reported family history of all
other cancers. Only one of the breast cancer patients
had been previously diagnosed with ovarian cancer.
History of cancer in subjects and their families was
not associated with the disease diagnosis.

All of the subjects were examined for benign
changes in breast skin and nipple like redness and exfo-
liation. However, none of diagnosed patients with breast
cancer had these changes in their breasts. Final diagno-
sis of breast cancer was confirmed in 38 of 25201 sub-
jects of study which was 0.15%, 95%CI; 0.10-0.20.

Discussion

The results of this study showed that prevalence of
breast cancer in the specific population of study was
0.15% which is much lower than other studies on
breast cancer prevalence from Iran. The majorities
of subjects in this study (93%) had their first full-term
pregnancy at age less than 26 years and also were
multiparous. Furthermore, those with a higher number
of pregnancies were less likely to be diagnosed with
breast cancer. It has been shown that early pregnancy

[10,11]
and multiparity are protective factors for breast cancer development. About half of subjects of this study had never used OCP and the rest had reported OCP use between ages 20 to 30 years, without mentioning the duration of usage. In addition, apart from use of OCP, 94% of subjects had reported no hormone replacement therapy. It has been also reported that prolonged exposure to exogenous estrogens and progestins in hormone therapy increased a woman’s risk of developing breast cancer.

Eighty six percent of our study population were illiterate or had education level less than 6 years. A 36% lower risk was observed for women with more than 16 years of education as compared to those with the lowest educational achievement (7-9 years). Alcohol intake was another risk factor for breast cancer and none of subjects of this study were alcoholic.

These characteristics of our study population could be a reason for the very low prevalence of breast cancer among them. Moreover, all subjects were from a low social class and deprived subgroups of Iran’s population. Although recent studies have shown that breast cancer risk is increasing in developed countries, some studies reported that changes in risk of breast cancer differs in various ethnicities. The prevalence of breast cancer is much higher in developed countries but with a better prognosis. In Iran with a lower prevalence, it has been shown that the overall prognosis is worse when compared to developed countries.

Furthermore, despite the high prevalence, the prognosis of breast cancer is better in the developed countries. However, although the prevalence of breast cancer in Iran is lower than that in the developed countries, the overall prognosis is worse. Since this study was conducted on a specific group of Iran’s population, further investigations on general population are needed to measure the prevalence of breast cancer in normal population.

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### Conflict of interest

None declared.