The Correlation Between Breast Cancer and Plastic Bras in Fars Province, Southern Iran

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Abstract: Breast cancer is the most prevalent cancer among Iranian women and accounts for 21.4% of all malignancies. The study determines the correlation between breast cancer and plastic bras in Fars Province, Southern Iran. From March 2010 to March 2012, 351 breast cancer patients were enrolled. Their demographic information and clinical reports and any history of plastic or cotton bras wearing were recorded and statistically analyzed. Among 351 breast cancer patients, 203 were resident in Shiraz and 148 in other cities of the province, 333 subjects reported wearing plastic bras (192 cases were living in Shiraz and 141 in cities) and 18 reported wearing cotton bras (10 were habitat of Shiraz and 8 in other cities). All women in Shiraz reported wearing of plastic breast bras while in other cities just 50%. Only 5% of women in the province wore cotton breast bras. Among breast cancer patients, 95% wore plastic breast bras and 5% wore cotton breast bras. In Shiraz, the female breast cancer incidence was 35/100,000 of population (ductal carcinoma: 80%, medullary carcinoma: 5.5%, lobular carcinoma: 4.4%, mucinous carcinoma: 1.4%, phyllodes tumor: 1.4%, Paget's disease: 0.7%, papillary carcinoma: 0.4%, adenocarcinoma in situ: 0.4%). Wearing cotton bras seems to decrease the incidence of breast cancer and can be recommended to replace plastic bras.

Keywords: Breast Cancer · Plastic · Cotton · Bras · Iran

INTRODUCTION

In 2008, globally almost 1.4 million women were diagnosed with breast cancer and about 459,000 deaths were also confirmed. Incidence rates were shown to be higher in more developed countries than less developed ones (71.7/100,000 and 29.3/100,000 respectively, adjusted to the World 2000 Standard Population) while the se figures for mortality rates were 17.1/100,000 and 11.8/100,000. Five-year relative survival estimates were reported to be from 12% in areas of Africa to about 90% in the United States, Australia and Canada, with the differential linked to a combination of availability of treatment services, early detection and cultural differences. Improvements noticed in survival of breast cancer in more developed parts of the world in recent decades may be due to introduction of population-based screening programs [1].

According to the report of the Iranian Centre for the Prevention and Control of Disease, Ministry of Health and Medical Education of Iran in 2000; breast cancer is the most prevalent cancer among Iranian women and accounts for 21.4% of all malignancies. In Fars Province, Southern Iran, breast cancer was shown to be the most common cancer in females while its crude incidence rate was 11.58 and age specific rate was 18.06 [2, 3]. The mean age at the time of diagnosis of breast cancer was shown to be 46.3 years (SD=11.5) while one, 5, 10 and 15 year-survival rates were 97%, 67%, 45% and 25%, respectively. The survival rate had a significant negative correlation with age at the time of diagnosis [4].

Rezaianzadeh et al. reported that five-year overall survival of breast cancer in Fars Province, southern Iran was 58% [5]. Rajaeeefard et al. demonstrated that the life expectancy for all patients was 10.03 years. This life expectancy in early stages of breast cancer for
mastectomy and lumpectomy was 8.99 and 8.35 years, respectively [6]. In United States, breast cancer constitutes 29% of all new malignant neoplasms and 16% of deaths from cancer in women [7]. This study determines the correlation between breast cancer and plastic bras wearing.

MATERIALS AND METHODS

From March 2010 to March 2012 in Fars province, south of Iran, all women with breast cancer who referred to medical clinics of Shiraz Central Hospital and Mottahari Clinic, affiliated to Shiraz University of Medical Sciences and registered in Nemazee Hospital Cancer Registry were enrolled. Their demographic information and clinical reports and any history of plastic or cotton bras wearing were recorded and statistically analyzed. Three hundreds and fifty one breast cancer patients were enrolled (203 were resident in Shiraz and 148 in other cities of the province).

RESULTS

The annual incidence rate of female breast cancer in Fars Province during the last 3 years was 24/100,000 population comprising 13% of all new malignant neoplasms. The annual incidence rate in Fars Province was 16/100,000 population in 15-49 years and 48/100,000 in 50 years and older age groups. In Shiraz, the center of Fars Province, the female breast cancer incidence was 35/100,000 population and in other parts of the province was 17/100,000 population. The age group of 40-49 years had the highest rate of breast cancer.

Among female breast cancer patients, 333 subjects reported wearing plastic bras (192 cases were living in Shiraz and 141 in cities of the province) and 18, cotton bras (10 were resident of Shiraz and 8 in other cities of the province) (p=0.0001).

The histology of breast cancer was as follows: Infiltrative (invasive) ductal carcinoma in 80%, medullary carcinoma in 5.5%, lobular carcinoma in 4.4%, mucinous carcinoma in 1.4%, phyllodes tumor in 1.4%, Paget’s disease in 0.7%, papillary carcinoma in 0.4% and adenocarcinoma in situ in 0.4%. The right and the left breasts were involved equally by the malignancy.

DISCUSSION

Genetics, environmental, hormonal, sociobiology and physiological factors were recorded the development of breast cancer [8]. Evidence for the effect of occupational, environmental, or chemical exposures on breast cancer risk is limited. Plastic molecules are long chains of repeating units of monomers [9]. There are increased risks of breast cancer with breast implants and other silicone products [10]. A case of adenocarcinoma of breast associated with polyethylene prosthesis was previously reported [11].

In a study conducted in Fiji Island, the incidence of breast cancer in two groups of women who wore bras with those who did not was compared. It was noticed that those who did not wear bras experienced no breast cancer [10]. In another study, it was found that wearing a bras for at least 14 hours a day lead to an increase of prolactin level. It may cause a decrease in blood circulation in the breast tissue and this decrease may impede the removal of any carcinogenic fluid trapped in the breast lymph nodes.

If plastics considered as causative agents for breast cancer, plastic cloths like plastic bras may result into breast cancer in women. Our findings on the difference in the incidence of breast cancer between Shiraz and other cities of Fars Province (35/100.000 vs. 17/100.000) may be due to more wearing of plastic bras in Shiraz City. Women who wore cotton bras were not affected by breast cancer even the number of subjects who wore cotton type (5%) was not comparable to the group wearing plastic bras (95%). The difference in the incidence of breast cancer in Shiraz and other cities of Fars Province (35/100.000 vs. 17/100.000) may be due to more wearing of plastic bras in Shiraz population. The trends in incidence in women population in different age groups may better reflect changes in risk factors [12]. The future worldwide breast cancer burden is strongly influenced by lifestyle. Efforts should be undertaken to increase the survival for women with breast cancer using cost-effective interventions [1]. As El-Shinawi et al. (2013) concluded that breast cancer public awareness and women education programs should be warranted among populations; therefore, informing women on wearing cotton bras seems to decrease the incidence of breast cancer and replacing them with plastic bras seem necessary [13].

REFERENCES


