The Egyptian Journal of Hospital Medicine Vol., 18 : 73 - 87 March 2005
I.S.S.N: 12084
1687 - 2002

Female Breast Cancer: Epidemiological And Clinical Study Of Some Risk Factors Among Egyptian Females- Multi Clinics Study

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Abstract

This study was conducted on 390 female breast cancer patients and an equal number of females as controls. The patients were attending some University and Teaching Hospitals in Cairo and Assuit. Ninety of them were newly operated. A retrospective, case-control, clinic based study was chosen to carry out this research. The aim of the study was to describe the sociodemographic, characteristics and clinical features of female breast cancer and to determine its risk factors among Egyptian women. All the patients and the controls had undergone physical examinations. Laboratory investigations were done for the newly operated patients and their controls. The most important characteristics of breast cancer patients were breast mass as the main presenting symptom (92.1%) and treated by modified radical mastectomy (77.2%). Low means level of serum vitamin D and high levels of serum cholesterol and triglyceride were found more among the patients. Age at first full term pregnancy ≥ 30 years, age at menopause ≥45 years, pregnancy termination and/or abortion and never married were important gynaecological and reproductive risk factors (OR=4.44, 3.14, 2.84 and 2.67, respectively). Also, exposure to radiation and/or environmental factors, history of benign breast disease and alcohol use were important associated risk factors (OR=5.05, 4.63 and 4.10, respectively). Moreover, the sister as the nearest female relative with breast cancer, total number of female relatives with breast cancer ≥2 and relative(s) age at diagnosis <50 years were important family history risk factors (OR=9.19, 8.84 and 7.91, respectively). Lastly, high consumption of canned foods, fat rich foods and low consumption of fresh fruits and vegetables were important dietary risk factors (OR=3.39, 1.76 and 1.51, respectively).

Introduction

Cancer is the nation's leading health concern (Smith *et al*., 2004). Breast cancer affects one in every eight women during their entire life in United States (US) (Centers for Disease Control and Prevention, 2001). It is the leading cause of cancer among women in US with 203,500 new cases expected annually and it is the second cause of cancer death, 39,600 deaths per year (American Cancer Society, 2002a). Also, 17.5% and 27.4% reported increase in incidence and mortality rates between 1970 to 2000 (Thun and Jemal, 2003). Moreover, it represented 31.0% and 15.0% of all cancers and cause of cancer death among women in US, respectively (American Cancer Society, 2002b). Better detection and treatment modalities have improved a woman's chance of surviving breast cancer (Parker *et al*., 1997).

It must be translated to public health and clinical interventions that reach all members of our society and achieve our mission of diminishing suffering and saving lives. We still may not be able to 'cure' cancer, but we have made significant advances in cancer prevention (Vance et al., 2004). Reducing cancer incidence through primary prevention is the most desirable goal, chemoprevention and vaccines hold the greatest promise (Ford *et al.*, 2003). Organized screening programs with high rates of attendance can greatly reduce breast cancer mortality (Smith *et al*., 2003).

Breast cancer is typically a disease, which occurs with advancing age (Feuer *et*

al., 1993). Ductal carcinoma is the most common variant, but lobular carcinoma occurs up to 10.0% of cases. Rare variants, as colloid and medullary carcinomas are also present (Weiss, 2004). Endogenous hormones are important in pathogenesis of breast cancer, they are the underlying mechanism for most of risk factors (Yager and Liehr, 1996). Family history of breast cancer is one of the most significant risk factors. Several lines of evidence support a role for genetic factors in breast cancer susceptibility. Finding breast cancer susceptibility genes and mutations within them provide the ultimate evidence (Wooster *et al.,* 1994 and Ford & Easton, 1995). Other risk factors include early menarche, late menopause, having the first live birth at a later age, higher body mass index, alcohol use, hormone replacement, some forms of benign breast disease, prior radiation exposure, nulliparity, gene carrier status of BRCA1 and BRCA2, prior history of breast neoplasia, social class and reproductive variables (Dupont and Page, 1987; Kelsey, 1993; Ford *et al*., 1995; Skegg *et al*., 1995; Collaborative Group on Hormonal Factors in Breast Cancer, 1996a; Fitzgibbons *et al*., 1998; Ghadirian *et al*., 1998; Armstrong *et al.,* 2000 and Singletary, 2003). Also, interest has naturally focused on possible modifiable risk factors, such as dietary manipulation of food intake (Kelsey and Brikowitz, 1988) and smoking (Marcus, 2000).

The aim of the present study is to describe the sociodemographic, presentation and clinical characteristics and features of female breast cancer patients and to determine its risk factors among Egyptian women.

Subjects And Methods

Three hundred and ninety adult female patients with breast cancer were attending General Surgery Clinics (GSCs), Al-Hussein, Al-Zhra'a and Assuit University Hospitals and Al-Sahel Teaching Hospital and Radiation Oncology C, Al-Hussein University Hospital for treatment and follow up, were enrolled in this study. Ninety patients of them were newly operated, within a maximum period of one month. All the patients' sheets were reviewed, the patient with incomplete data was excluded from the study. An equal number (390) of adult females as controls were selected from patients attending GSCs in all hospitals for reasons other than cancer. Both breast cancer patients and controls were matched in age, their age range, 36-72 years. A retrospective, case-control, clinic based study was chosen to carry out this research. The purpose of the study and procedures to be performed were explained to the patients and the controls and an oral consent was taken.

All the patients and the controls had undergone complete physical examinations. Anthropometric measurements, height (cm) and weight (kg) were measured with participants standing without shoes and with heavy outer garments. Body mass index (BMI) was calculated as weight divided by height squared (kg/m^2). BMI classifications were: normal (18.5-24.9 kg/m^2), preobese (25.0-29.9 kg/m^2) and obese ($\geq$30 kg/m^2) (WHO, 2000). Venous blood samples, 5 milliliters with the patients fasting, were taken from the newly operated patients and the corresponding controls to determine the lipids profile and the role of some vitamins as risk factors for female breast cancer. Total serum (S) cholesterol (mg/ dl) was determined by an enzymatic technique according to Richmond (1973). Serum triglycerides (mg/dl) was determined according to Esders and Michrina (1979). Serum high and low-density lipoprotein cholesterol (SHDL-& SLDL-cholesterol) (mg/dl) were determined. SLDL-cholesterol was precipitated by the addition of phosphotungestic acid in the presence of magnesium ions. The supernatant obtained contains HDL, from which cholesterol was determined enzymatically (Steele *et al.*, 1976). SLDL-cholesterol was calculated according to Friedwald's equation (Friedwald *et al*., 1972). Vitamin A (µg/dl) was measured by photometeric technique using serum, vitamin C (mg/dl) was measured by photometeric technique (dinitrophenylhydrazin method) using serum and vitamin D3 (pg/ml) was measured by competitive protein binding

assay (CPBA) using serum (Spiekerman, 2000). Breast masses were examined pathologically. While, estrogen receptor was determined by immuno peroxides in breast biopsy specimens (Sapino *et al.*, 2001).

Both the patients and the controls were submitted to an interview to answer questions relevant to topic of the study. Odds ratio (OR) with 95% confidence interval (CI) or exact confidence limits (ECL) and t-test were used as tests of significance. The significance level for t-test was accepted if the P-value ≤ 0.05.

Results And Discussion

In this study (table 1), 41.1% of female breast cancer patients were 50-59, 37.9% were ≥60 and only 7.2% were <40 years old. Winchester (1996) cleared, 7.5% of breast cancer cases were diagnosed among women <40 years old. While, El-Bestar *et al.* (1990) showed, 54% of their patients were 25-44.9, 38% were 45-64.9 and 8% were ≥65 years old. Moreover, Centers for Disease Control and Prevention (2001) reported, 3.5%, 28.0%, 43.2% and 25.3% of female breast cancer cases were in age groups 20-39, 40-59, 60-79 and ≥80 years, respectively. Regarding the main presenting symptom, breast mass was the most common symptom (92.1%). Key et al. (1987) and El-Bestar et al. (1990) observed, about 94.0% of their patients presented by a breast mass. As regard menstrual status at diagnosis, 14.3% and 85.7% of patients were pre-and postmenopausal, respectively. El-Bestar *et al*. (1990) and Feuer et al. (1993) supported these results. Pregnancy at diagnosis, was found among 0.3% of patients. Donegan (1983) cleared, breast cancer is the malignancy most frequently diagnosed during pregnancy. However, DiFronzo and O'Connell (1996) stated, the simultaneous occurrence of breast cancer and pregnancy is relatively infrequent. Regarding type of therapy, 100.0% of the patients were treated by surgery and radiotherapy (RT), 65.4% by surgery, RT and chemotherapy (CT) and 4.4% by surgery alone. This is expected and accepted, as surgery is the corner stone in management of breast cancer. As regard type of surgery, modified radical mastectomy was the most frequent operation, 77.2%. Again, this is expected and accepted as most of our patients presented in stages II and III. Regarding anti-hormonal therapy, 69.7% of patients were under anti-hormonal therapy. This figure is expected as, 67.8% of the patients were estrogen receptor positive (table 2). Regarding history of the same and/or the other breast cancer, 23.9% of the patients had positive history. This was in accordance with Kelsey (1993) and Singletary (2003). While, positive history of benign breast disease was noticed among 6.9% of the patients. This was in consistent with (Dupont & Page, 1987 and Armstrong *et al*., 2000). Lastly, post-therapy pregnancy was observed among only one patient (0.3%), also, this is expected as most of our patients presented in stages II and III, treated by RT and CT and were postmenopausal.

As regard distribution of the newly operated female breast cancer patients according to their clinical features (table 2), 87.9% of them had breast lump, this was close to Key *et al.* (1987) and El-Bestar *et al*. (1990). As regard site of the breast mass, 52.2% of them were found in the upper outer quadrant of the breast. Regarding tumor size and clinical staging, 53.3% of the masses were >5 cm and 73.4% of the cases were in stages II and III. These results were supported by El-Bestar *et al*. (1990). Cancer is frequently diagnosed at a later stage among persons with low income and educational status, as our patients, (SEER, 1999). This is reflected, where the percent of cancer diagnosed at a localized stage, it was lower among African Americans than among whites (American Cancer Society, 2002b). Lower use of mammography contributes to the racial disparity in stage at diagnosis (Breen *et al*., 2001). As regard histopathological features, 58.9%, 15.6% and 8.9% of the cases were infiltrating duct, infiltrating lobular and mixed duct and lobular carcinoma, respectively. These results were similar to Weiss (2004). Lastly, regarding lymph node and distant metastasis, 47.8% of the patients had 5-9 axillary lymph nodes and only 2.2% of them had distant metastasis.

Regarding anthropometric measurements of the newly operated breast cancer patients and the controls (table 3), body weights of the breast cancer patients and the controls were 79.68 ± 6.57 and 72.32 ± 5.48 kg, respectively, with a statistically significant difference. These results agreed with Ursin *et al.* (1995); McCredie *et al*. (1999) and Morimoto *et al*. (2002). They cleared, increased breast cancer risk was associated with weight. Morimoto *et al*. (2002) stated, weight was the strongest predictor for breast cancer (RR=2.85, 95% CI: 1.81-4.49) for women weighing >82.2 kg compared with those weighing <58.7 kg. On the other hand, Amine *et al.* (1990) did not find difference between their cases and controls. Also, height of the breast cancer patients and the controls were 162.46 ± 4.51 and 157.28 ± 3.65 cm, respectively, with a statistically significant difference. These results were confirmed by Colditz *et al*. (1993) and refuted by Amine *et al*. (1990). As regard serum vitamins A, C and D3 of the breast cancer patients and the controls, they were 53.79 ± 6.93 and 62.26 ± 8.72 µg/dl, 0.67 ± 0.18 and 1.41 ± 0.39 mg/dl and 27.26 ± 7.61 and 35.38 ± 8.36 pg/ml, respectively, with a statistically significant difference. An inverse relationship has been shown between breast cancer and vitamins A and C (Rohan *et al*., 1988 and Howe *et al*., 1990). Moreover, vitamin D protects against breast cancer (Mercola, 2004). Lastly, total serum cholesterol, LDL-& HDL-cholesterol and triglyceride of the breast cancer patients and the controls were, 226.37 ± 46.82 and 183.51 ± 32.13 mg/dl, 173.87 ± 36.29 and 148.21 ± 29.43 mg/dl, 41.16 ± 8.61 and 48.36 ± 7.25 mg/dl and 148.92 ± 36.51 and 121.17 ± 32.46 mg/dl, respectively, with a statistically significant difference. These results agreed with Zaghloul *et al*. (1987); Amine *et al*. (1990); Kesteloot *et al*. (1991) and Prichard *et al*. (2003). Lipids reduction decrease the circulating serum oestradiol level. This in turn leads to a reduction in the incidence of breast cancer conclusively (Prichard *et al*., 2003). The high body weight, high lipids intake, high serum lipids and physical inactivity, collectively, increase breast cancer risk (Howard *et al*., 1992).

As regard sociodemographic risk factors of the female breast cancer patients and the controls (table 4), 46.9% of the patients had secondary or university education compared with 15.9% of controls (OR=4.68, 95% CI: 3.30 -6.64). That agreed with Zaghloul *et al.* (1987) and McCredie *et al*. (1999) who clarified, the high education level group among their patients had a statistically significant difference. On the other hand, Gann (1997) stated, low education and icome levels were associated with high incidence and mortality rates of breast cancer among white and black women in US. The implication of this study is that many of the disparities in cancer incidence associated with race may be caused by factors associated with poverty rather than by genetic correlates of race (Thun and Jemal, 2003). Lower education level attainment reduces access to medical screening and is often associated with greater exposure to tobacco, heavy alcohol use, poor nutrition, physical inactivity, being overweight and other risk factors (Howard *et al*., 1992). Also, 14.1% and 85.9% of our patients were house wives and working, respectively. Zaghloul *et al*. (1987) found, 76% and 14% of their patients were not working and working, respectively. Further, semi-skilled and skilled occupations represented risk factor (OR=1.42, 95% CI: 1.04-1.93). Moreover, professional occupations represented more risk (OR=2.32, 95% CI: 1.58-3.43). Collectively, 36.4% of patients belonged to high social class (OR=3.42, 95% CI: 2.37-4.92). Our result was in consistent with Ghadirian *et al*., 1998 and McCredie *et al*. (1999). The impact of socioeconomic status on cancer occurrence is usually examined indirectly, through comparisons of racial and ethnic groups. But few studies have separated the impact of poverty and its attendant risk factors from genetic differences associated with race (Baquet *et al*., 1999). However, female breast cancer incidence was higher in whites than in other racial and ethnic groups during the years 1995 to1999 in US

(SEER, 1999). Cancer incidence is more among persons with lower income and educational status in high social class (Gann, 1997). The social conditions and ideologies that promoted later marriage, late age at first live birth and women's entry into the work, all these factors represent risk for breast cancer. Further, urban residence status represents a risk factor (OR=2.63, 95% CI: 1.44-4.83). This could be explained, urban residence might indicate risky life style, previously mentioned, tobacco smoking (Ghadirian *et al.*, 1998) and more exposure to environmental hazards. Mercola (2004) pointed, ample amounts of sunshine could protect women from breast cancer, while, women who live in cloud (working women inside walls) may not get enough vitamin D to receive this natural benefit.

In this study (table 5), never married patients (7.4%) were at risk for breast cancer (OR=2.53, 95% CI: 1.22-5.35). Zaghloul *et al*. (1987) reported a close figure (8.0%), Kamel *et al*. (1983) reported a lower figure (2.9%) and El-Bestar *et al*. (1990) reported a higher figure (14.0%). Regarding age at menarche <13 years, was found among 72.8% of the patients compared with 62.1% of controls (OR=1.64, 95% CI: 1.20-2.24). Dupont and Page (1987) agreed with our result, while, McCredie *et al*. (1999) did not found significant difference between their breast cancer patients and controls. Also, 78.0% and 52.9% of the breast cancer patients and controls had age at menopause ≥45 years, respectively (OR=3.14, 95% CI: 1.99-4.98). Dupont and Page (1987) and Zaghloul et al. (1987) supported our finding. Also, 23.8% and 10.5% of the patients and controls had age at menopause ≥45 years, respectively (OR= 2.67, 95% CI: 1.76-4.05). So, for more than 40 years, the patients were under effect of endogenous hormons, which led to increase the risk of breast cancer (Dupont & Page 1987 and Yager & Liehr, 1996). Also, age at first full term pregnancy ≥30 years was a risk factor (OR=4.44, 95% ECL:1.84-12.28 years, respectively (OR=3.14, 95% CI: 1.99-4.98). This result was in accordance with Kamel *et al*. (1983); Dupont and Page (1987); Zaghloul et al. (1987); Colditz *et al*. (1993) and McCredie *et al*. (1999). Moreover, nulliparity found to be a risk factor for breast cancer (OR=1.97, 95% CI: 1.31-2.97). Our finding was supported by Kamel *et al*. (1983); Zaghloul *et al*. (1987); Colditz *et al*. (1993) and McCredie *et al*. (1999). Kamel *et al*. (1983) reported, OR=1.43. Furthermore, never breast-feeding represented a risk (OR= 2.72, 59% CI: 1.84-4.05). This was in accordance with Zaghloul *et al*. (1987) and McCredie *et al*. (1999). Lastly, pregnancy termination and/or abortion were found among 15.1% and 5.9% of the patients and controls, respectively (OR=2.84, 95% CI: 1.67-4.86). Also, our finding was supported by Kamel *et al*. (1983); Zaghloul *et al*. (1987); Sanderson et al. (2001) and Ye *et al*. (2002). On the other hand, Rookus & Van Leeuwen (1996) and Beral *et al*. (2004) did not found that association. The earlier studies were carried out in societies where induced abortion considered stigma as in our society, while, latter studies were carried out in societies where induced abortion was accepted.

As regard, breast cancer associated risk factors (table 6), 20.0% and 5.1% of the patients and controls had a history of benign breast disease, respectively (OR=4.63, 95% CI: 2.70-8.00). This was agreed with, Dupont & Page (1987) and Colditz *et al*. (1993). Regarding history of hormonal contraceptive use, 32.1% of the patients used hormonal contraceptive, pills and/or injections (OR=1.57, 95% CI: 1.13-2.19). Collaborative Group on Hormonal Factors in Breast Cancer (1996 a & b) found a small risk. On the other hand, Marchbanks *et al*. (2002) did not found that risk. As regard hormonal replacement therapy (HRT), 0.8% and 0.3% of the patients and controls used HRT, respectively, (OR=3.02, 95% ECL: 0.24-158.71). Writing Group for The Women's Health Initiative Investigators (2002) supported this result specially for invasive carcinoma. Regarding obesity, BMI ≥30 represent a risk (OR=1.28, 95% CI: 0.96-1.72). This result was in accordance with McCredie *et al.* (1999) and Morimoto et al. (2002). They cleared, increased breast cancer risk was associated with BMI. Also,

passive and active smoking represent risk (OR=1.24, 95% CI: 0.93-1.66 and 2.94, 95% CI: 1.75-4.69, respectively). Brunet *et al*. (1998); Ghadirian *et al*. (1998) and Marcus (2000) confirmed our results and stated, active and passive smoking increase breast cancer risk by 2 fold. Regarding alcohol use, it increases breast cancer risk (OR=4.10, 95% ECL: 1.09-22.67). Collaborative Group on Hormonal Factors in Breast Cancer (2002) stated, many epidemiological studies shown increase risk of breast cancer was associated with alcohol use. Also, exposure to radiation and/or environmental factors found to be risk factors for breast cancer (OR=5.05, 95% ECL: 1.86-17.09). John and Kelsey (1993); Marcus (2000) and Carmichael *et al*. (2003) clarified, there is a well-established relation between exposure to ionizing radiation and the risk of developing breast cancer. While, other studies did not found that relation (Laden *et al*., 2001). Hoyer *et al*. (1998) stated, some findings suggest, organochlorine exposures, such as those associated with insecticides, might be associated with an increase in breast cancer risk. Also, Mercola (2004) stated, women who live in cloudy countries may be at risk, as they not get enough vitamin D to protect themselves against breast cancer. Ample amounts of sunshine could be the reason for lower cases of breast cancer in Mediterranean countries. Lastly, previously non-physically active women found to have more risk for breast cancer (OR=1.35, 95% CI: 1.00-1.82). Friedenreich (2001) and Prichard *et al*. (2003) clarified, exercise decrease the circulating serum oestradiol level, and this in turn leads to a reduction in the incidence of breast cancer.

As regard, the family history of breast cancer as a risk factor (table 7), results revealed, the risk according to the nearest female relative(s) with breast cancer were the sister (OR=9.19), the mother's/father's sister (OR=8.15), the mother (OR=5.63) or the maternal/paternal grand mother (OR=4.03). This was supported by Fahmy *et al*. (1991); Slattery and Kerber (1993); Ford & Easton (1995) and Ghadirian *et al*. (1998). Fahmy *et al*. (1991) showed, 1.7% and 1.7% of their patients had mother and sister with breast cancer. While, Slattery and Kerber (1993) reported, OR for 1st, 2nd and 3rd degree female relative(s) with breast cancer were 2.45, 1.82 and 1.35, respectively. Regarding age at diagnosis of female relative(s) with breast cancer, age at diagnosis <50 year represent a risk (OR= 7.91, 95% ECL: 1.13-87.17). This was confirmed by Colditz *et al*. (1993). As regard totall number of female relative(s) with breast cancer, 4.4% of patients had ≥2 relatives with breast cancer (OR=8.84, 95% ECL: 2.07-79.26). This was in accordance with Slattery and Kerber (1993). Lastly, male relative(s) with breast cancer was present among 2.3% and 0.5% of the patients and controls, respectively (OR=4.58, 95% ECL: 0.94-43.79). The breast cancer risk associated with family history may reflect shared genetic factors, shared environmental carcinogenic factors among family members or it may reflect shared life style.

Regarding food habits (table 8), high consumption of fat rich foods represents a risk factor for breast cancer (OR=1.76, 95% CI: 1.32-2.37). Anthropologists have found arguments for a protective effect of a low fat diet for cancer (Carwford, 1986). However, our result was supported by Zaghloul *et al*. (1987) and Amine *et al*. (1990) who observed, a statistically signify-cant difference between their patients and controls. Also, Kesteloot *et al*. (1991) found a significant correlation between dairy and lard fat intake and breast cancer, as a cause and mortality. Prichard *et al*. (2003), stated, dietary fat reduction decrease the circulating serum oestradiol level, this in turn leads to a reduction in the incidence of breast cancer. The high levels of serum lipids among breast cancer patients compared with controls, (table 3), confirmed our result. On the other hand, Hunter *et al*. (1996) refuted this relation. Also, high consumption of protein rich foods represents a risk factor for breast cancer (OR=1.22, 95% CI: 0.88-1.68). Again, this result was in agreed with Zaghloul *et al*. (1987) and Amine *et al*. (1990). Also, low consumption of carboh-ydrate rich foods represents a risk for breast cancer (OR=1.13, 95% CI: 0.85-1.51).

Zaghloul *et al*. (1987) and Amine *et al*. (1990) did not found this relation. Moreover, high and medium consumption of canned foods represent risk for breast cancer (OR=3.39, 95% CI: 1.97-5.87 and 2.50, 95% CI: 1.67-3.76, respectively). These results were in agreed with Zaghloul *et al*. (1987) and Amine *et al*. (1990). Lastly, low consumption of fresh fruits and vegetables represent risk for breast cancer (OR=1.51, 95% CI: 1.11-2.05). Also, this result was in consistent with Zaghloul *et al*. (1987); Amine *et al*. (1990); World Cancer Research Fund and American Institute for Cancer Research (1997) and Smith-Warner *et al*. (2001).

It could be concluded that female breast cancer is an important health problem. Identification and appreciation the role of each risk factor for breast cancer may ultimately lead to improve preventive and therapy strategies and decrease burden of the disease either physically or psychologically. Also, financial burdens for direct medical cost, lost productivity and indirect mortality cost will decrease. Modified radical mastectomy was the common type of surgery. Low serum vitamin D and high serum cholesterol and triglyceride were found more among the patients. High age at first full term pregnancy and menopause and never married were important gynaecological and reproductive risk factors. Also, positive family history and dietary pattern were important risk factors. So, it could be recommend that, more work should be carried out on a big number of population all over Egypt to understand the true epidemiology and clinical features of female breast cancer. Also, the need for a strong national cancer prevention and control strategy and the integration of breast cancer preventive services into the health facilities that women use.

Table (1): Characteristics of the studied female breast cancer patients.

Characteristics	N=390	%
Age at diagnosis (years):		
< 40	28	7.2
40-49	54	13.8
50-59	160	41.1
≥60	148	37.9
Main presenting symptom:		
Breast mass	359	92.1
Pain	12	3.1
Lymph node lump	9	2.3
Nipple retraction/discharge	6	1.5
Ulceration of the nipple/skin	2	0.5
Metastatic symptoms	2	0.5
Menstrual status at diagnosis:		
Pre-menopause	56	14.3
Post-menopause	334	85.7
Pregnancy at diagnosis:		
Yes	1	0.3
Type of therapy:		
Surgery	17	4.4
Surgery + radiotherapy (RT)	390	100.0
Surgery + chemotherapy (CT)	166	32.6
Surgery + RT + CT	138	65.4
Palliative RT and/or CT	23	5.9
Type of surgery:		
Lumpectomy	34	8.7
Simple mastectomy	55	14.1
Modified radical mastectomy	301	77.2
Anti-hormonal therapy (n=300):		
Yes	209	69.7
History of the same and/or the other breast cancer:		
Yes	93	23.9
History of benign breast disease:		
Yes	27	6.9
Post-therapy pregnancy:		
Yes	1	0.3

Table (2): Distribution of the newly operated female breast cancer patients according to clinical features.

Clinical features	N=90	%
Signs:		
Breast lump	79	87.9
Bloody nipple discharge	4	4.4
Peau d'orange	3	3.3
Fixation to the skin	2	2.2
Fixation to the deep tissues	2	2.2
Site of the breast mass (most):		
Upper outer quadrant	47	52.2
Central	15	16.7
Lower outer quadrant	13	14.4
Upper inner quadrant	12	13.3
Lower inner quadrant	3	3.3
Tumor size:		
TIS carcinoma in situ (CIS)	3	3.3
T1 < 2 cm	7	7.8
T2 2-5 cm	28	20.0
T3 > 5 cm	48	53.3
T4 infiltrating the adjacent tissues	4	15.6
Lymph node (LN):		
N0 no LN	9	10.0
N1 1-4 axillary (A) LN	31	34.4
N2 5-9 ALN/intra mammary chain	43	47.8
N3 >9 ALN/ supra clavicular LN	7	7.8
Metastasis:		
M0 no distant metastasis	88	97.8
M1 distant metastasis	2	2.2
Clinical staging:		
Stage O (CIS)	3	3.3
Stage I (mobile mass)	19	21.1
Stage II (fixed to the skin and/or fascia)	32	35.6
Stage III (invading the muscles and/or ribs)	34	37.8
Stage IV (invading organs)	2	2.2
Histopathological features:		
Infiltrating duct carcinoma	56	58.9
Infiltrating lobular carcinoma	14	15.6
Mixed duct and lobular carcinoma	8	8.9
Duct carcinoma in situ	3	5.6
Mucinous carcinoma	3	3.3
Poorly differentiated duct carcinoma	3	3.3
Tubular carcinoma	2	2.2
Cystosarcoma phylloids	1	2.2
Esterogen recepetor (ER):		
Positive (+ve)	61	67.8

Table (3): Distribution of the newly operated female breast cancer patients and corresponding controls according to anthropometric measurements and laboratory results.

Variables	Patients Mean ± SD	Controls Mean ± SD	t-value	P-value
Body weight (kg)	79.68±6.57	72.32±5.48	8.161	0.000
Height (cm)	162.46 ±4.51	157.28 ±3.65	8.470	0.000
Vitamin A (µg/dl)	53.79±6.93	62.26±8.72	7.214	0.000
Vitamin C (mg/dl)	0.67±0.18	1.41±0.39	16.344	0.000
Vitamin D3 (pg/ml)	27.26±5.61	35.38±6.36	9.083	0.000
Total S cholesterol (mg/dl)	226.37±46.82	183.51±32.13	7.161	0.000
S LDL-cholesterol (mg/dl)	173.87±36.29	148.21±29.43	5.210	0.000
S HDL-cholesterol (mg/dl)	41.16±8.61	48.36±7.25	6.068	0.000
S triglyceride (mg/dl)	148.92±36.51	121.17±32.46	5.389	0.000

Table (4): Distribution of female breast cancer patients and control group according to sociodemographic risk factors.

Sociodemographic risk factors	Patients		Controls		OR (95%CI)
	No.	%	No.	%	
Educational level:					
Illiterate and read & write	113	29.0	227	58.2	0.29 (0.22-0.40)
Elementary	94	24.1	101	25.9	0.91 (0.65-1.27)
Secondary & university	183	46.9	62	15.9	4.68 (3.30-6.64)
Occupational Level:					
House wife	55	14.1	113	29.0	0.40 (0.28-0.59)
Unskilled	82	21.0	105	26.9	0.72 (0.51-1.02)
Semi-skilled & skilled	152	39.0	121	31.0	1.42 (1.04-1.93)
Professional	101	25.9	51	13.1	2.32 (1.58-3.43)
Social class:					
Low	125	32.1	223	57.1	0.35 (0.26-0.48)
Middle	123	31.5	111	28.5	1.16 (0.84-1.59)
High	142	36.4	56	14.4	3.42 (2.37-4.92)
Residence status:					
Urban	372	95.4	346	88.7	2.63 (1.44-4.83)
Rural	18	4.6	44	11.3	0.38 (0.21-069)

Table (5): Distribution of female breast cancer patients and control group according to gynaecological and reproductive history risk factors.

Gynaecological and reproductive history risk factors	Patients		Controls		OR (95%CI)
	No.	%	No.	%	
Marital status:					
Never married	29	7.4	12	3.1	2.53 (1.22-5.34)
Married	361	92.6	378	96.9	0.40 (0.19-0.82)
Age at menarche:					
<13 years	284	72.8	242	62.1	1.64 (1.20-2.24)
≥13 years	106	27.2	148	37.9	0.61 (0.45-0.84)
Age at menopause:	n=186		n=221		
<45 years	41	22.0	104	47.1	0.32 (0.20-0.50)
≥45 years	145	78.0	117	52.9	3.14 (1.99-4.98)
Menstrual period ≥40 years:					
Yes	93	23.8	41	10.5	2.67 (1.76-4.05)
Age at first full term pregnancy:	n=307		n=343		
<20 years	58	18.9	110	32.1	0.49 (0.34-0.72)
20-29 years	223	72.6	226	65.9	1.37 (0.97-1.95)
≥30 years	26	8.5	7	2.0	4.44 (1.84-12.28)*
Parity:					
0	83	21.3	47	12.1	1.97 (1.31-2.97)
1-3	49	12.6	66	16.9	0.71 (0.46-1.07)
≥4	258	66.1	277	71.0	0.80 (0.58-1.09)
Breast feeding:					
Never	106	27.2	47	12.1	2.72 (1.84-4.05)
1-3 years	114	29.2	132	33.8	0.81 (0.59-1.11)
≥4 years	170	43.6	211	54.1	0.66 (0.49-0.88)
Pregnancy termination/abortion:					
Yes	59	15.1	23	5.9	2.84 (1.67-4.86)

* Exact confidence limits

Table (6): Distribution of female breast cancer patients and control group according to the associated risk factors.

Associated risk factors	Patients		Controls		OR (95% CI)
	No.	%	No.	%	
History of benign breast disease:					
Yes	78	20.0	20	5.1	4.63 (2.70-8.00)
Hormonal contraceptive use:					
Yes	125	32.1	90	23.1	1.57 (1.13-2.19)
Hormonal replacement therapy:					
Yes	3	0.8	1	0.3	3.02 (0.24-158.71)*
Obesity (BMI, kg/ m²):					
Normal <25	109	28.0	144	36.9	0.66 (0.48-0.91)
Preobese 25- 29.9	89	22.8	78	20.0	1.18 (0.83-1.69)
Obese ≥30	192	49.2	168	43.1	1.28 (0.96-1.72)
Smoking:					
Never smoke	107	27.4	167	42.8	0.50 (0.37-0.69)
Passive smokers	220	56.4	199	51.0	1.24 (0.93-1.66)
Smokers	63	16.2	24	6.2	2.94 (1.75-4.96)
Alcohol use:					
Yes	12	3.1	3	0.8	4.10 (1.09-22.76)*
Exposure to radiation/environment al factors:					
Yes	24	6.2	5	1.3	5.05 (1.86-17.09)*
Previously have you physically active:					
No	168	43.1	140	35.9	1.35 (1.00-1.82)

* Exact confidence limits

Table (7): Distribution of female breast cancer patients and control group according to family history of breast cancer.

Items of family history of breast cancer	Patients		Controls		*OR (95% ECL)*
	No.	%	No.	%	
Nearest female relative(s) with breast cancer:					
1st degree relative:					
Mother	11	2.8	2	0.5	5.63 (1.21-52.52)
Sister	9	2.3	1	0.3	9.19 (1.26-403.77)
2nd degree relative :					
Maternal/paternal grand mother	4	1.0	1	0.3	4.03 (0.40-199.02)
Mother's/father's sister	8	2.1	1	0.3	8.15 (1.08-362.39)
3rd degree and more relatives :					
Cousins	3	0.8	1	0.3	3.02 (0.24-158.71)
More distant relatives	5	1.3	2	0.5	2.52 (0.41-26.58)
Age at diagnosis of female relative(s) with breast cancer:	n=40		n=8		
<50	29	72.5	2	25.0	7.91 (1.13-87.17)
≥50	11	27.5	6	75.0	0.13 (0.01-0.88)
Total No. of female relatives breast cancer:					
1	23	5.9	6	1.5	4.01 (1.56-12.16)
≥2	17	4.4	2	0.5	8.84 (2.07-79.26)
Male relative(s) with breast cancer:					
Yes	9	2.3	2	0.5	4.58 (0.94-43.79)

Table (8): Distribution of female breast cancer patients and control group according to past history of food habits.

Past history of food habits variables	Patients		Controls		OR (95% CI)
	No.	%	No.	%	
Consumption of fat rich foods:					
High	226	57.9	171	43.8	1.76 (1.32-2.37)
Medium	122	31.3	111	28.5	1.14 (0.83-1.57)
Low	42	10.8	108	27.7	0.32 (0.21-0.47)
Consumption of protein rich foods:					
High	122	31.3	106	27.2	1.22 (0.88-1.68)
Medium	190	48.7	184	47.2	1.06 (0.80-1.42)
Low	78	20.0	100	25.6	0.73 (0.51-1.03)
Consumption of carbohydrate rich foods:					
High	78	20.0	93	23.9	0.80 (0.56-1.14)
Medium	122	31.3	119	30.5	1.04 (0.76-1.42)
Low	190	48.7	178	45.6	1.13 (0.85-1.51)
Consumption of canned foods:					
High	63	16.2	21	5.4	3.39 (1.97-5.87)
Medium	96	24.6	45	11.5	2.50 (1.67-3.76)
Low	231	59.2	324	83.1	0.30 (0.21-0.42)
Consumption of fresh fruits and vegetables:					
High	123	31.5	171	43.8	0.59 (0.44-0.80)
Medium	108	27.7	97	24.9	1.16 (0.83-1.61)
Low	159	40.8	122	31.3	1.51 (1.11-2.05)

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سرطان الثدي في الإناث: دراسة وبائية وإكلينيكية لبعض عوامل الخطورة بين الإناث المصريات ـ دراسة في عيادات متعددة

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كلية الطب – جامعة الأزهر وهيئة المستشفيات التعليمية

أجريت هذه الدراسة علي 390 مريضة بسرطان الثدي وكذلك علي عدد مماثل من الإناث كمجموعة ضابطة . وكانت هؤلاء المريضات يترددن علي بعض المستشفيات الجامعية والتعليمية بالقاهرة وأسيوط . وقد تم إجراء جراحة حديثا لعدد 90 مريضة منهن. وقد اختير نمط دراسة الحالة الضابطة، الإسترجاعيه في العيادة لإجراء هذا البحث . وكان الهدف من هذه الدراسة وصف الخصائص الاجتماعية الديموجرافية و الإكلينيكية وخصائص السيدات المصابات بالمرض وكذلك تحديد عوامل خطورة هذا المرض بين الإناث المصريات. وقد أُخضعت كل مجموعة البحث للفحص الطبي، كما تم عمل الفحوصات المعملية للمريضات اللاتي أجريت لهن الجراحة حديثا وكذلك المجموعة الضابطة لهن.

كانت أهم خصائص مريضات سرطان الثدي: ورم بالثدي (92.1%) ، واستئصال ثدي جذري معدل (77.2%). ولقد وجد أن متوسط مستوى مصل الدم المنخفض لفيتامين د والعالي للكلسترول والدهون الثلاثية أكثر بين المريضات. وكان من أهم عوامل خطورة التاريخ النسوي والإنجابي: العمر ≤ 30 عام عند أول حمل كامل ، العمر عند انقطاع الطمث ≤ 45 عام ، إنهاء حمل و/أو إجهاض وعدم الزواج (نسبة أودز =4.44 ، 3.14 ، 2.84 ، 2.67 علي الترتيب). كذلك كان من أهم عوامل الخطورة المصاحبة: التعرض للإشعاع و/أو العوامل البيئية، التاريخ المرضي لأورام الثدي الحميدة وتعاطي الكحوليات (نسبة أودز = 5.05 ، 4.63 ، 4.10 علي الترتيب). وعلاوة علي ذلك كان من أهم عوامل الخطورة العائلية: الأخت كأقرب أنثى في العائلة أصيبت بالمرض، العدد الكلي من الأقارب الإناث اللاتي تعانين من المرض ≤ 2 والعمر عند التشخيص < 50 عام (نسبة أودز = 9.19 ، 8.84 ، 7.91 علي الترتيب). وأخيرا كان من أهم عوامل الخطورة الغذائية كثرة استخدام الأطعمة المعلبة والغنية بالدهون وقلة استخدام الفواكه والخضر الطازجة (نسبة أودز = 3.39 ، 1.76 ، 1.51 علي الترتيب).