RESEARCH ARTICLE

Incidence Data for Breast Cancer among Yemeni Female Patients with Palpable Breast Lumps

Jamila Ali Alsanabani*, Waleed Gilan[&], Azzan Al Saadi[&]

Abstract

<u>Purpose</u>: To estimate the incidence of breast cancer in Yemeni female patients presenting with a breast mass. <u>Materials and Methods</u>: This retrospective study was carried out with 595 female patients with palpable breast lumps, attending to Alkuwait university hospital, Sana'a, Yemen. Triple assessment, including breast examination, mammography and biopsy (FNAC, core needle, or excision), for all patients were performed. <u>Results</u>: The incidences of benign and malignant lesions was calculated. Some 160 (26.9%) of 595 patients had malignancies; 213 (35.8%) were fibroadenomas; 12 (2.0%) were fibrocystic change; 143 (24.03%) were inflammatory lesions (including mastitis and ductectasia); 62 (10.4%) were simple cysts, while 5 (0.8%) were phyllodes tumors. The mean age of patients with malignant lumps was 44.3 years. <u>Conclusions</u>: Among Yemeni female patients with palpable breast lumps, the rate of breast cancer is high, with occurrence at an earlier age than in Western countries. Improving breast cancer awareness programs and increasing breast cancer screening centers inb different areas of Yemen are needed to establish early diagnosis and offer early and optimal treatment

Keywords: Breast cancer - non-cancers - biopsy - female - Yemen

Introduction

Breast cancer is the most common type of cancer in women worldwide (Mizota and Yamamoto, 2012) representing 1.38 million new cases (23% of all reported cancer in women) in 2008 worldwide (Ferlay et al., 2010). The global incidence of breast cancer is escalating) and it is the leading cause of female cancer related disability and mortality (WHO, 2011). The range of mortality rates (approximately 6-19 per 100,000), made it the fifth most common cause of cancer-related death overall (Mathers et al., 2008; Ferlay et al., 2010). In the Middle East and Gulf region the incidence of breast cancer is rising and affecting a younger population compared to the West. In the Arab world, there are very few breast cancer awareness programs (Abdel Hadi 2000; Bener et al., 2008).

According to the International Agency for Cancer Research and GLOBOCAN 2008, in the Gulf Cooperation Council (GCC) countries breast cancer incidence rates are highest in Bahrain (49.8/100,000), followed by Kuwait (47.7/100,000) and Qatar (38.1/100,000). Compared to other Arab peninsular countries, such as Saudi Arabia (22.4/100,000) and Yemen (20.8/100,000), (International Agency for Research on Cancer, 2008).

In Sana'a-Yemen, study of the pattern of malignancies among 1,491 patients found that, breast cancer ranked first among Yemeni women and formed 8% of all cancers (Al-Thobhani et al., 2001). On the other side, remote epidemiological studies about breast cancer in south eastern areas of Yemen, reported breast cancer as the most leading site of cancer among women in Aden city (Bawazir et al., 1998). Between January 2002 and December 2006, the population-based Aden Cancer Registry reported 334 cases of female breast cancer. This cancer was the first ranked cancer among overall cancer sites (16.6%) and female cancers (30.3%) (Ba Saleem et al., 2010).

Materials and Methods

The rate of breast cancer was estimated in all patients with palpable breast lumps who were-referred-attended Alkuwait university hospital. This study included all patients with breast palpable mass from January 2011 to December 2013. Questionnaire to obtain essential data about the patients and triple assessment for all patients were performed. In addition biopsy (FNAC, core needle, or excision) for all solid lumps were done.

Statistical analysis

Data were analyzed by using a computer SPSS program, version 18. Chi square test used for statistical analysis.

Results

A total of 595 patients were diagnosed with palpable

*Surgical Department, Faculty of Medicine&Health Sciences, Sana´A University , Sana´A, Yemen &Equal contributors *For correspondence: jsanabani@yahoo.com*

Table 1. Demographic Characteristics of the Patients (n=595)

Variable		Freq.	(%)
Age groups	15 -30 year	295	49.60
	31-45 year	219	36.80
	46-60 year	59	9.90
	61-75 year	20	3.40
	76-90 year	2	0.30
Marital status	Single	173	29.10
	Married	422	70.90
Lump site	Right	281	47.20
	Left	276	46.40
Bilateral		38	6.40

Table 2. Characters of the Malignant Lumps

Variable	Freq.	(%)
Tumor size		
T1	20	12.50
T2	96	60.00
T3	29	18.10
T4	15	9.40
Axillary lymph node		
N0	26	16.30
N1	133	83.10
N2	1	0.60
Distant metastasis		
Yes	8	5.00
No	152	95.00
Type of malignancy		
Carcinoma insitu	5	3.10
Invasive ductal carcinoma	147	91.90
Invasive lobular carcinoma	7	4.40
Malignant phyllodus	1	0.60
Treatment		
BCS	33	21.20
Partially mastectomy & LDF	9	5.80
MRM	114	73.10
Referral	4	

Table 3. Relation between Age Group with the Pathology of the Lumps

	Benign tumor		Malignant tumor		
	Freq.	(%)	Freq.	(%)	p value
Age groups					<0.001
15 - 30	277	93.90	18	6.10	
31 - 45	137	62.60	82	37.40	
46 - 60	17	28.80	42	71.20	
61 - 75	4	20.00	16	80.00	
76 - 90	0	0.00	2	100	
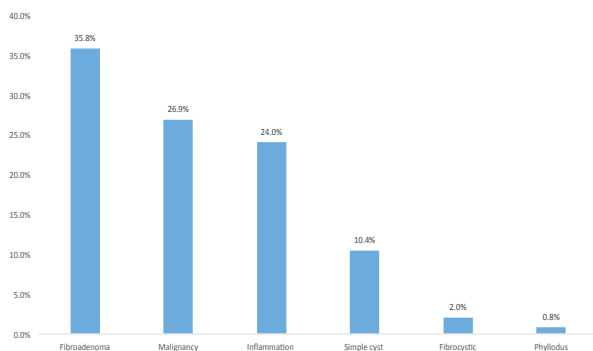
Figure 1. Types of the Lumps

breast lumps. The ages of these patients ranged from 15 to 80 years old with mean age of 33.1 years. The diagnoses of the patients were as follows: 160 (26.9%) of 595 patients were malignant; 213 (35.8%) were fibroadenomas; 12 (2.0%) were fibrocystic change; 143 (24.03%) were inflammatory lesions (including mastitis, abscess and ductectasia); 62 (10.4%) were simple cysts, while 5 (0.8%) were phyllodus tumor (Figure 1).

The mean age of patients with fibroadenomas is 24.9 (SD 6.8), 83.1% at the age group (15-30) years old; while the mean age of patients with malignancy is 44.3 (SD 12.6), 51.3% at the age group (31-45) years old. About 422 of our patients were married among whom 142 (33.65%) were having malignant changes; conversely 173 were single patients among whom fibroadenoma was detected in 118 (68.2%). Furthermore of the 595 patients, only 21 were found with nipple discharges, among which (4.4% %) were patients with cancer.

Of the 160 malignant lesions, 20 (12.5%) were detected with T1, 96 (60%) with T2, 29 (18.1%) with T3 and only 15 (9.4%) were detected with T4. The primary lesion sites were found as follows: left side (77patients, 48.1%), right side (81 patients, 50.6%) and bilateral (2 patients, 1.3%). Moreover, 50.6% of the malignant lesions and 46% of the fibroadenoma lesions were observed at right side of the breast (Table 1). About 133 (83.14%) and 8 (5%) of patients with malignant lesions presented with palpable axillary lymph nodes and distant metastasis to the lungs respectively.

Regarding type of malignancy 147 (91.9%) of the lumps were found to be invasive ductal carcinoma, 7 (4.4%) were invasive lobular carcinoma and only 5 (3.1%) were carcinoma insitu. In addition one patient was found to have malignant phyllodus tumor. For these patients; Modified radical mastectomy, breast conservative surgery and partial mastectomy with latissmus dorsia flap reconstruction were performed in 114 (73%), 33 (21.2%) and 9 (5.8%) of the patients respectively. Four of the patients were referred to oncology center for systemic chemotherapy (Table 2).

Concerning the distribution of the study population by age it was apparent that the risk of cancer increasing with increase in age, as about 100%, 80%, 71.2%, 37.4% and 6.1% of the patients with cancer were detected in the age range (76-90),(61-75), (46-60), (31-45), (15-31) respectively (p<0.001), (Table 3).

Discussion

Incidences of breast cancer exceed all female cancer with high mortality rates worldwide (Parkin, 2001; Ferlay et al., GLOBOCAN 2002). Several Yemeni studies confirmed that breast cancer is the first cancer in women (Al-Hadrani et al., 2000; Al-Thobhani et al., 2001; Bawazir et al., 2002). In this study the rate of breast cancer was 26.9% (160 out of 595 patients) among patients presenting with palpable breast lump. It is similar to the rate reported in the literature that was lower than 30% (Hisham and Yip, 2003; Kuraparthy et al., 2007; Amin etal., 2009). However Al-Rikabi and Husain, 2012 and Ahmed et al, 2010 had a higher rate of breast cancer (33.3%, 34%) in their studies,

among Saudi and Sudanese patients respectively. This difference may be explained by increasing breast cancer awareness and cancer screening centers that help in early breast cancer detection. The majority of patients with breast cancer were young with mean age of 44.3. It was found that they were younger than that reported in other studies from Arab countries including 48.49 years in Saudi Arabia (Jamal, 2001), 49 years in Jordan (Aghassi et al., 2002), 49 years in Lebonon (El Saghir et al., 2002) and 48 years in Egypt (Elatar, 2002). These figures are lower than the mean age of breast cancer in the West which is around 60 years (Boyleand Ferlay, 2005; Parkin et al., 2005; Jemal et al., 2010).

Evidence suggests that breast tumors diagnosed in young women have biology distinct from breast tumors diagnosed in older women. Breast cancer in young women associated with a markedly poorer overall survival and shorter recurrence-free survival relative to disease in older women. The five year relative survival rate for women diagnosed prior to age 40 years are approximately 78%-84% to over 90% among women diagnosed at age 60 years or older. This discrepancy in survival may be attributed to the fact that breast cancer is significantly less likely to be diagnosed at an early stage in young women than in older women (Christopher, 2010).

However, about 100%, 80%, 71.2% and 37.4% of the cancer patients were detected at age ranges 76-90, 61-75, 46-60 and 31-45, respectively. These results indicate that the risk for breast cancer increases with the increase in age. These findings were widely advocated in the literature by numerous studies.

The majority of our patients diagnosed with breast cancer were detected with T2 (tumor size 2-4cm) at the time of diagnosis, while several Yemeni studies reported an advanced stage at the time of diagnosis (Harhra and Basaleem, 2012). This difference may be explained by effectiveness of breast cancer awareness program in Sana'a city but in general the socio-economic issues, cultural barriers and religious believes are still an important contributing factors for delayed presentation. In this study, invasive ductal carcinoma was the commonest (91.9%) nearer to what reported otherwise (Jamal, 2001; Elatar, 2002; Jemal et al., 2010; Harhra and Basaleem, 2012).

The main surgical treatment of breast cancer in our study was modified radical mastectomy (73%), although the majority of the patients were diagnosed at an early stage (stage 11). This option often had been selected, may be due to patient's fear of local recurrences; limited number of radiotherapy centers; socio-economic factors.

However in our study the majority of the palpable breast lumps were fibroadenomas, constituting 213 of 595 (45%) patients. This finding was similar to other reports (Al-Rikabi and Husain,.2012; Ahmed et al., 2010). Such patients were young, with mean age of 24.9 years. Although fibroadenomas are not cancerous or life-threatening lesions they can still be a source of significant anxiety and concern to the patient.

In conclusion, among Yemeni female patients with palpable breast lump, the rate of breast cancer is high which occurs at an earlier age than in Western countries.

Improving of breast cancer awareness programs and increasing breast cancer screening centers at different areas of Yemen are needed to establish early diagnosis and perform optimal treatment.

References

Abdel Hadi M (2000). Breast cancer awareness among health professionals. *Ann Saudi Med*, **20**, 135-6.

Aghassi IM, Green M, Shohat S (2002). Familial risk factors for breast cancer among Arab women. *Eur J Cancer Prev*, **11**, 327-31.

Ahmed HG, Ali AS, Almoberak AO (2010). Frequency of breast cancer among Sudanese patients with breast palpable lumps. *Indian J Cancer*, **47**, 23-6.

Al- Hadrani A, Al- Aulagis, Qubaty M (2000). Breast cancer in Yemeni women. *JNat Appsc*, **4**, 185-7.

Al-Rikabi A and Husain S (2012). Increasing prevalence of breast cancer among Saudi patients attending a tertiary referral hospital: a retrospective epidemiologic study. *Croat Med J*, **53,** 239-43.

Al-Thobhani AK, Raja'a YA, NomanTA (2001). The pattern and distribution of malignant neoplasms among Yemeni patients. *Saudi Med J*, **22**, 910-13.

Amin TT, Al-Mulhim AR, Chopra R (2009). Histopathological patterns of female breast lesions at secondary level care in Saudi Arabia. *Asian Pac J Cancer Prev*, **10**, 1121-6.

Ba Saleem HO, Bawazir AA, Moore M, Al-Sakkaf KA (2010). Five years cancer incidence in Aden Cancer Registry, Yemen (2002-2006). *Asian Pac J Cancer Prev*, **11**, 507-11.

Bawazir AA, Abdul Hamid G (2002). Pattern of cancer in Aden city 1997. *Yemen med Health Res*, **1**, 47-58.

Bawazir AA, Abdul Hamid G, Charles E (1998). Analysis of cancer data in two governorates of Yemen. *East Mediter Health*, 101-13.

[...] incidence among the [...] study. *Asian Pac J Cancer Prev*, **9**, [...]

Ferlay J, Shin HR, Bray F, et al (2010). Estimates worldwide burden of cancer in 2008: GLOBOCAN 2008. International Journal of cancer. *Int J Cancer*, **127**, 2893-917.

Ferlay J, Bray F, Pisani P, Parkin DM (2002). GLOBOCAN: Cancer incidence, mortality and prevalence worldwide.

Harhra NA, Basaleem HO (2012). Trends of breast cancer and its management in the last twenty years in Aden and adjacent governorates, Yemen. *Asian Pac J Cancer Prev*, 4347-51.

Hisham AN, Yip CH (2003). Spectrum of breast cancer in Malaysian women: Overview. *World J Surg*, **27**, 921-3.

International agency foe research on cancer (2008). Breast cancer statistics.

Jamal A (2001). Pattern of breast disease in a teaching hospital in Jeddah, Saudi Arabia. *Saudi Med J*, **22**, 110-13.

Jemal A, Siegel R, Xu J, et al (2010). Cancer statistics 2010. *Cancer J Clin*, **60**, 277-300.

Kuraparthy S, Reddy KM, Yadagiri LA, et al (2007). Epidemiology and patterns of care for invasive breast carcinoma at a community hospital in Southern India. *World J Surg Oncol*, **5**, 56.

Jamila Ali Alsanabani et al

Mathers C, Fat DM, Boerma JT, et al (2008). The global burden of disease: 2004 update, World Health Organization.

Mizota Y, Yamamoto S (2012). Prevalence of breast cancer risk factors in Japan. *Jpn J Clin Oncol*, **42**, 1008-12.

Parkin DM, Bray F, Ferlay J, etal (2005). Global cancer statistics, 2002. *CA cancer J Clin*, **55**, 74-108.

Parkin DM (2001). Global cancer statistics in the year 2000. *Lancet Oncol*, 533-43.

WHO (2011). Breast cancer: prevention and control.