The incidence rate and mortality rate of breast cancer in Wasit Province

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Abstract
Breast cancer is the most common tumor among women worldwide. However, there is large geographical variation in its incidence. A retrospective case-control study was conducted at breast cancer unit of Wasit Governorate in Al-Zahraa Teaching Hospital, to detect the socio-demographic characteristics, incidence rate and mortality rate of females’ patients with malignant breast cancer. The highest percentage of breast cancer patients was in Kut City (69.04%), while the lowest percentage of breast cancer patients was in Dijaly City and Shaikh-Saad City (2.38%). According to age group of breast cancer patients, the highest percentage was (47.61%) in age group 41-50 while the lowest percentage of breast cancer patients was (2.38%) in age group 21-30 and 81-90 respectively. The highest percentage of breast cancer was in urban area (78.57%), while in rural area the percentage was (21.42%) of Wasit population. In general the incidence rate was (15.98%) and mortality rate was (40.47%). The mean of age groups is
51.42, Standard Deviation is 12.41, Minimum age group 28 years and Maximum age group 80 years. The normal distribution of breast cancer patients’ age showed the highest frequencies of breast cancer were detected between 40-60 age years; there is no infection with breast cancer under 20 years old. The mean of age groups is 51.42, Standard Deviation is 12.41, Minimum age group 28 years and Maximum age group 80 years. The conclusion is the majority of breast cancer patients were in Kut city. The recommendation is the need to hold periodic medical examination for early detection of breast cancer.

Introduction

Breast cancer is a malignant proliferation of epithelial cells lining the ducts or lobules of the breast. In the year 2010, about 180,000 cases of invasive breast cancer and 40,000 deaths will occur in the United States. Epithelial malignancies of the breast are the most common cause of cancer in women (excluding skin cancer), accounting for about one-third of all cancer in women (1, 2).

Multiple risk factors for the development of breast cancer have been identified; the principal risk factor is gender, breast cancer is largely a disease of women, although it does occur in men. A second critical risk factor is age, about 75% of breast cancer cases in the United States are diagnosed in women older than 50 years of age. Family history is a third critical risk factor, about 20% of breast cancer occurs in women with a family history of breast cancer; increased risk is associated with diagnosis of breast cancer in first-degree relatives younger than 50 years, 5 to 8% of breast cancer cases occur in high-risk families. Several familial breast cancer syndromes with associated molecular abnormalities have been identified, chief among them is the breast ovarian cancer syndrome, which is linked to germline mutations in the breast cancer susceptibility genes, BRCA1 and BRCA2. Reproductive risk factors include early menarche, late menopause, null parity, and late first pregnancy. Among the factors that appear to enhance breast cancer risk are ionizing radiations during adolescence, prolonged use of hormone replacement therapy, ongoing use of oral contraceptives, and alcohol consumption (3, 4).

Mammograms and clinical breast examinations are commonly used techniques to screen for breast cancer. Standard treatment options for breast cancer include surgery, radiation therapy, chemotherapy, hormone therapy and targeted therapy (5).

Breast cancer is the most commonly diagnosed cancer among women, second leading cause of cancer death among women about 5% invasive breast cancer cases occur among women aged <40 years. Breast cancer, in young women is most often associated with family history and/or genetic mutations diagnostic work-up more difficult, because there is no good tool for young women due to breast density fibrocystic changes difficult to distinguish from cancer. Younger women often present with more aggressive disease (6, 7).
About 75% of women with breast cancer in developing countries are diagnosed in clinical stages III and IV, whereas approximately 70% of newly diagnosed women with breast cancer in North America are in stages 0 and 1 because breast cancer is often diagnosed in late stages in women in lead maternity cares, mortality rates are often much higher compared with rates in developed countries (8, 9).

When detection occurs before any spread, the five-year survival rate is 97%. After spread to the local lymph nodes, it is 76%. After metastasis to other organs, the five-year survival rate is 20% (10).

**Aims of the study**

The aims of study are to detect the socio-demographic characteristics, incidence rate and mortality rate of female patients with malignant breast cancer in Wasit Governorate.

**Materials and methods**

**Study Design**

This is a retrospective case-control study was conducted at breast cancer unit of Wasit Governorate in Al-Zahraa Hospital.

**Time of the study**

Data collection lasted from first of March 2012 till first of July 2012. The time sequence of data collection continued for a period of 4 months. The cases of breast cancer were diagnosed in 2011 year in all Wasit Governorate cities.

**Place of the study**

The scene of the study was in breast cancer unit of Wasit Governorate in Al-Zahraa Hospital.

**Sampling Design**

The sample of the present study included 42 involved females with malignant breast cancer in Wasit Governorate.

**Approvals and permissions**

Arrangements were carried out to get approvals from the Directorate of Health of Wasit Governorate for Al-Zahraa Hospital.

**Data Collection**

The data collection was made by:

1- The clinical registers of patients with malignant breast cancer in breast cancer unit of Al-Zahraa Hospital for all patients in Wasit Governorate.

2- The clinical registers of patients with malignant breast cancer in statistical unit of Al-Zahraa Hospital for all patients in Wasit Governorate.

**Data Analysis**

Data feeding followed by descriptive and analytic statistics that were carried out by utilizing the SPSS version 17 to estimate the number and percentage of the studied parameters, mean, standard deviation of the age groups, incidence and mortality rates (11).
Results

The present study included 42 involvement females with malignant breast cancer in 6 cities of Wasit Governorate. The highest percentage of breast cancer patients was in Kut City 69.04% while the lowest percentage of breast cancer patients was in Dijaly City and Shaikh-saad City 2.38% (Table 1).

Table (1): The numbers and percentages of breast cancer patients in Wasit Governorate (n= 42).

<table>
<thead>
<tr>
<th>Name of city</th>
<th>Number of breast cancer patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kut City</td>
<td>29</td>
<td>69.04%</td>
</tr>
<tr>
<td>Numania City</td>
<td>5</td>
<td>11.9%</td>
</tr>
<tr>
<td>Hay City</td>
<td>4</td>
<td>9.52%</td>
</tr>
<tr>
<td>Zubaidia City</td>
<td>2</td>
<td>4.76%</td>
</tr>
<tr>
<td>Dijaly City</td>
<td>1</td>
<td>2.38%</td>
</tr>
<tr>
<td>Shaikh-saad City</td>
<td>1</td>
<td>2.38%</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>100%</td>
</tr>
</tbody>
</table>

According to age group of breast cancer patients, the highest percentage was 47.61% in age group 41-50 while the lowest percentage of breast cancer patients was 2.38% in age group 21-30 and 81-90 respectively (Table 2).

Table (2): The numbers and percentages of breast cancer patients according to age group (n= 42).

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Number of breast cancer patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-30</td>
<td>1</td>
<td>2.38%</td>
</tr>
<tr>
<td>31-40</td>
<td>4</td>
<td>9.52%</td>
</tr>
<tr>
<td>41-50</td>
<td>20</td>
<td>47.61%</td>
</tr>
<tr>
<td>51-60</td>
<td>8</td>
<td>19.04%</td>
</tr>
<tr>
<td>61-70</td>
<td>5</td>
<td>11.95%</td>
</tr>
<tr>
<td>71-80</td>
<td>3</td>
<td>7.14%</td>
</tr>
<tr>
<td>81-90</td>
<td>1</td>
<td>2.38%</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>100%</td>
</tr>
</tbody>
</table>

According to marital status of breast cancer patients, the highest percentage was in married 80.95%, while the percentage of non married was 19.04% (Figure 1).

Figure (1): The marital status of breast cancer patients in Wasit Governorate (n= 42).

The mean of age groups is 51.42, Standard Deviation is 12.41, Minimum age group 28 years and Maximum age group 80 years (Table 3).
Table (3): The descriptive statistics of age groups (n= 42).

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>51.42</td>
<td>12.41</td>
<td>28</td>
<td>80</td>
<td></td>
</tr>
</tbody>
</table>

The normal distribution of breast cancer patients age showed the highest frequencies of breast cancer were detected between 40-60 age years, there is no affection with breast cancer under 20 years old (Figure 2).

The incidence rate of breast cancer in Wasit Governorate for 2011 year is:

\[ \frac{42}{262784} \times 100000 = 15.98\% . \]

The mortality rate of breast cancer in Wasit Governorate for 2011 year is:

\[ \frac{17}{42} \times 100 = 40.47\% . \]

The highest percentage of breast cancer was in urban area 78.57% while in rural area the percentage was 21.42% (Figure 3).

The incidence rate of breast cancer were survivor 60%, while dead cases were 40% (Figure 4).

**Discussion**

Breast cancer is a major cause of death of women in both globally and regionally. Studies have shown that most patients with
breast cancer in the region present for the first time at stages two and three, indicating the need for increased community awareness and early detection of the disease (12, 13).

In the present study the highest percentage of breast cancer patients was in Kut city 69.04% while the lowest percentage of breast cancer patients was in Dijaly City and Shaikh-Saad City 2.38% respectively this is may be attributed to the variation in environmental pollution as Kut city exposed to American bombs containing depleted uranium for many times during wars and Kut City is more densely populated area from Dijaly City and Shaikh-Saad. The results of other study shows, there were 40,675 women with breast cancer in Japan in 2001(ranking second among cancer cases by site of cancer), accounting for 16.7% of all cases of cancer. In 2002, the number of American women with breast cancer was 168,632 (ranking first among cancer cases by site of cancer), accounting for 30.4% of all cases of cancer (14).

According to age group of breast cancer patients, the highest percentage was 47.61% in age group 41-50, this is may be attributed to hormonal replacement therapy as estrogen used to regulate the menstrual cycle or certain estrogen products may also be used by women after menopause to prevent osteoporosis. The results of other study in Malaysia showed the highest percentage of breast cancer was 33.6% in age group 40-49 (15).

According to marital status of breast cancer patients, the highest percentage was in married females 80.95%, this is may be attributed to the using of contraceptive drugs and not relies on breastfeeding in child nutrition.

The results also showed the highest percentage of breast cancer was in urban area 78.57%, while in rural area the percentage was 21.42%, this difference may be due to the variation in eating habits, physical activity, age at menarche, reproductive history, hormonal drug use as contraceptive and rely on breastfeeding in child nutrition. The results of the present study showed the incidence rate in Wasit Governorate was 15.98% and the mortality rate was 40.47% other results of study in United States showed the incidence rate of breast cancer in women was 31% and the mortality rate was 15% (16).

Conclusions

The majority of breast cancer patients were in Kut City. The highest percentage of breast cancer patients was in age group 41-50. The highest percentage of breast cancer patients was in married females. The highest percentage of breast cancer was in urban area. The highest cases of breast cancer were survivor.

Recommendations

The need to hold periodic medical examination for early detection of breast cancer. Avoid drug abuse of hormonal treatments, unless consulting a specialist doctor and stay away from the indiscriminate use. The importance of breastfeeding as preventive measure against breast cancer.

References


