(JZS) Journal of Zankoy Sulaimani, 2009, 12(1) Part A **(59-65)**
گۆڤاری زانکۆی سلێمانی ، 2009 بەرگ12 (1) بەشی A

The Incidence Rate of Breast Cancer in Suleimani Governorate in 2006: Preliminary Study.

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Abstract

Background: *Breast cancer is the most common site-specific cancer in women. The incidence rate of breast cancer in Suleimani did not estimated before the year 2006. The aim of this study is to find out the incidence rate of breast cancer and some other statistical data in Suleimani city / Iraq in 2006.* ***Patients and Methods:*** *A questionnaire was designated to collect data from all newly diagnosed breast cancer patients in the year 2006, and from control group. We set up a hypothesis that to be tested using Chi-Square test at 95% confidence level.* ***Results:*** *The number of patients was 61 (60 females and 1 male). The incidence rate in females is 10.1 per 100000 adult females in the year 2006. The age group of highest incidence is 45 – 54. Most of patients are house wives, married, fertile, living in city center and urban areas, have no family histories of breast carcinoma, nonsmokers, have history of breast feeding, have body mass index above normal range, and mammography or U/S was infrequent screening test for breast mass done for them. Invasive ductal carcinoma of breast is the most frequent tumor among patients. The results revealed that 11 (18.0%) of patients have history of exposure to chemical weapons in the year 1988.* ***Conclusion:*** *The incidence rate of breast cancer in Suleimani is 10.1 per 100000 adult females in the year 2006, which is relatively low incidence.*

Keywords: Breast cancer, Suleimani city, incidence rate, 2006, mammography, risk factors.

Introduction

The incidence rate of breast cancer in Suleimani did not estimate before the year 2006. The incidence of breast cancer varies greatly around the world, being lower in less-developed countries and greatest in the more-developed countries. In twelve world regions, the annual age-standardized incidence rates per 100,000 women are as follows: in Eastern Asia, 18; South Central Asia, 22; sub-Saharan Africa, 22; South-Eastern Asia, 26; North Africa and Western Asia, 28; South and Central America, 42; Eastern Europe, 49; Southern Europe, 56; Northern Europe, 73; Oceania, 74; Western Europe, 78; and in North America, 90 [1]. Several factors are implicated as risk factors for development of breast cancer like genetic factors [2] and hormonal factors. Moderate levels of exercise, a longer lactation period, and factors that decrease the total number of menstrual cycles, are protective [3]. Other risk factors include older age at first live birth, obesity, radiation exposure, smoking, and alcohol intake [4, 5]. There are several types of breast cancer, though some of them are quite rare. The most common types are ductal carcinoma and lobular carcinoma [6]. In addition to clinical examination, many diagnostic tools are used like

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mammography, ultrasonography, and biopsy [7].

Aim

The aim of this study is to find out some statistical data on breast cancer in Suleimani in 2006 by determining the incidence rate of breast cancer in that year, collecting demographical data, and detecting some risk factors associated with breast cancer. A test hypothesis will be used to emphasis the comparison between study group and control group, and decision will be made by testing the null-hypothesis.

Patients and Methods

This study is a retrospective study, done in the Oncology Center in Suleimani city; the data collection is continued throughout the year 2006. All the patients are newly diagnosed as breast cancer in the year 2006**.** The Eligible participants were all Kurdish women, and. a questionnaire was designated that included set of questions and data records. The data were collected by direct interview with breast cancer patients and from medical personnel like oncologists, and pathologists. The other group (control group) was age, sex, and number matched with patients group**.** Proportions of patient group according to their residency, marital and pregnancy statuses, history of breast feeding, history of smoking, family history of breast cancer, history of exposure to chemical weapon and body mass index were tested with control group using Chi-Square test at 95% confidence level.

Results

The number of patients was 61 (60 females and 1 male). The incidence rate in females calculated and it was 10.1 per 100000 adult females in Suleimani city in the year 2006.

The age of breast cancer patients ranged between (25 – 72 years) with mean age 46. The age group of highest incidence is 45 – 54, (figure1).

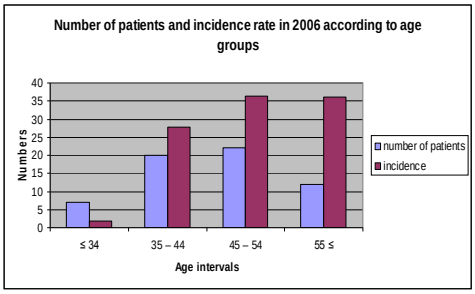

Figure (1) Numbers of patients with their incidence rate according to their age groups.

Regarding occupations, 49 of patients are housewives, and 12 are employees. The results clarified that 25 (41.0%) of patients are living in the city center, 31 (50.8%) of them in urban areas around center of Suleimany, and 5 (8.2%) of patients live in rural areas. Such proportion among patients were significantly different (P<0.05) than those found in the control group (table 1).

Table (1) Number of patients and control groups according to their residency:

Residency	Patient group	Control group
Suleimani center	25	23
Urban	31	12
Rural	5	26
Total	61	61

χ^2= 19.072, (P<0.05).

Six patients were single, while 55 were married. All the married patients have history of pregnancy. Marital status and pregnancy among breast cancer patients were not statistically significant when

compared to control group (P>0.05), (table 2). Those with 3-6 pregnancies represent the highest percentage (52.7%), and all having normal newborns; nevertheless, 12 of them have history of abortion before detection of breast cancer.

Table (2) Number of patients and control groups according to their marital statuses.

Marital status	Patient group	Control group
Married	55	47
Single	6	14
Total	61	61

χ^2= 3.827, (P>0.05).

History of breastfeeding was found in 43 patients which are equal to 70.5% of them, which is statistically not significant when compared to control group (P>0.05), (table 3).

Our results revealed that only 7 patients are smokers, while all other 54 patients are nonsmokers. Thus proportion of smokers among patients is not significantly different when compared to control group (P>0.05), (table 4).

Table (3) Number of patients and control group according to breastfeeding.

Breast feeding	Patient group	Control group
Yes	43	39
No	12	8
Total	55	47

χ^2= 0.370, (P>0.05).

Table (4) Number of patients and control groups according to their smoking habit.

Smoking	Patient group	Control group
Smokers	7	10
Nonsmokers	54	51
Total	61	61

χ^2= 0.615, (P>0.05).

Mammography or U/S was done as a screening examination for breast mass before detection of tumor in only 10 women which represent 16.6% of the overall patients.

The results demonstrated that 55 of patients having invasive ductal carcinoma of breast, while others having invasive lobular carcinoma, medullary carcinoma, mixed type, in a frequency of 4, 1, and 1 respectively. The difference between invasive ductal carcinoma and other types was statistically significant (P<0.05).

Our study illustrated that most of the patients involved have a unilateral tumor involvement (60 patients) which represent 98.4% and it was statistically significant (P<0.05), of which the left sided breast cancer is more dominant (32 patients), though difference in laterality was statistically not significant (P>0.05).

The results revealed that 36 of patients have metastasis to the axillary lymph nodes of whom six of them having bone metastasis. In our study, only two patients have both, brain and bone metastasis. All other 23 patients have no extra-mammary tumor metastasis.

In this study 51 (83.6%) of patients have no family histories of breast carcinoma, while the other 10 (16.4%) patients have positive history of breast cancer. Such proportions were not significantly different when compared to those in control group (P>0.05), (table 5).

Table (5) Number of patients and control groups according to family history of breast cancer.

Family history	Patient group	Control group
Positive	10	8
Negative	51	53
Total	61	61

χ^2= 0.261, (P>0.05).

Our results revealed that 43 of tumor cases were detected by patients themselves, whereas only 4 patients detected the tumor by planned self examination. The remainder 14 cases were detected by the doctors.

Forty six (75.4%) of patients have body mass index (BMI) above normal range. Such results were significantly different when compared with control group (P<0.05), (table 6).

Table (6) Number of patients and control groups according to Body Mass Index (BMI).

BMI	Patient group	Control group
Normal	15	28
Above normal	46	33
Total	61	61

χ^2= 6.069, (P<0.05).

The results revealed that only 11 (18.0%) of patients have history of exposure to chemical weapons in the year 1988 and such results were not significantly different from what found in the control group (P>0.05), (table 7).

Table (7) Number of patients and control groups according to chemical weapons exposure.

Chemical weapons Exposure	Patient group	Control group
Yes	11	5
No	50	56
Total	61	61

χ^2= 2.5896, (P>0.05).

Discussion

The results revealed that incidence rate of breast cancer is 10.1 per 100000 adult females in the year 2006 which is lower than the incidence in many other regions of the world like USA (incidence rate is 101.1), China, Zimbabwe, Japan, Brazil, Singapore, Italy, Switzerland, Australia, Canada, Netherlands, UK, Sweden, Denmark, and France [8]. These wide differences might be due to some factors like age of having first pregnancy which is usually less than 30, less air pollution due to less industrial activities, less use of oral contraceptive pills, less alcohol consumption, and less actively smoking women in Suleimany.

The incidence rate according to age groups in our study has a distinctive age-specific curve. The rapid rate of increase before the menopause (ages 40–50) slows down after that, probably owing to diminishing levels of circulating oestrogens [9]. The occupation might be a risk factor for breast cancer as some studies showed that farming as a job worked might have association with breast cancer development, nevertheless none of our patients was working in agriculture [10]. Regarding residency, our results are in accordance to results of Nicholas Perry, who found that women living in London (city-dwelling women) were more likely than their rural peers to have dense breasts women who live in urban areas, and for every increase in breast density, there is a relative risk of developing breast cancer [11]. Concerning marital status and pregnancy results showed an increase incidence of breast cancer after pregnancy, thus there might be a slight Increase in incidence of breast cancer after pregnancy due to hormonal changes, though not statistically significant, which is similar to a study done in Norway [12]. While another study on breast cancer in Tehran showed that single or divorced women are with higher incidence of breast cancer [13].

Regarding breastfeeding and family history, the results might give a clue that breastfeeding has a weak protective effect against breast cancer, or because breast cancer is of multifactorial etiology.

The result revealed poor relationship between cigarette smoking, and breast cancer; though the results of many other studies are different [14, 15].

The results indicate the need for a programmed screening test for breast cancer as 83.4% did not involved in any screening program.

Our results are in accordance to those of Perkins CI, *et al.*, and to a study done in Tehran who found that 71.6% are ductal carcinoma [16, 17].

In this study, left sided breast cancer is more than right sided breast cancer and thus identification of physiologic, pathologic or immunologic differences between left and right breasts may assist in explaining breast cancer laterality. This finding is generally consistent with results of Perkins CI, *et al.* [18].

Although these results showed that 70.5% detect tumor by themselves but only small percent of them (6.6%) have a previous idea about planned self examination of breast, which indicate the need to educate adult female about self-examination of breast.

Some of patients showed previous exposure to chemical weapons, which might add a new risk factor in the development of breast cancer as the carcinogenic effect of chemical weapons might take long duration to appear, while no previous studies about chemical weapons and breast cancer was conducted, many studies found that some chemicals like benzene, carbon tetrachloride, ethylene oxide, and lead oxide that are used in work place or home might increase risk of breast cancer [19].

The results clarify that increase in body weight might associated with increase risk of breast cancer, many other studies found that the prevalence of metabolic syndrome (obesity, glucose intolerance, low serum high-density lipoprotein cholesterol, high serum triglycerides, hypertension) is parallel with an increasing breast cancer incidence [20, 21].

Conclusion

We could conclude that the incidence of breast cancer in 2006 in Suleimani governorate was 10.1 per 100000 adult females, which is relatively low, with highest risk at age group 45-54 years; most of them have no any idea about screening for breast cancer. The findings of the present study suggest that residency, overweight, obesity, may have an impact on the incidence of breast cancer.

Acknowledgment

The authors wish to thank the staff of Oncology Center in Suleimani city for their cooperation, and also the referees of the Journal for their helpful comments. We are deeply grateful to Prof. Dr. Nazhad N. Maarof / College of Agriculture, for his valuable guidance the statistical analysis.

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توێژینەوەیەکی سەرەتایی سەبارەت دەربارەی ڕوودانی (شێرپە نجەی مەمك) ە لە پارێزگای سلێمانیدا بۆ ساڵی 2006

علی حاتم حسین، پەری محمد عزیز/ دەستەی خوێندنی تەکنیکی سلێمانی .هەرێمی کوردستان /عیراق.

پوختە

بە شێوەیەکی گشتی: شێرپە نجەی مەمك زۆرترین جۆری شێرپە نجەیە کە لە شوێنێکی دیاریکراوی ئافرەتاندا بلاوە. تا پێش 2006 ڕێژەی ڕوودانی ئەم شێرپە نجەیە لە سلێمانی دیاری نەکرابوو بۆیە مەبەست لەم توێژینەوەیە دۆزینەوەی ئەو ڕێژەیەیە کە لە ساڵی 2006 داهەبووە, هەروەها بۆ زانینی هەندێك لایەنی تری نەخۆشییەکە. **ئەخۆشەکان و ڕێگاکانی توێژینەوەکە:** دوای کۆکردنەوەی زانیا ری لەوانەوە کە تووشی نەخۆشیی شێرپە نجەی مەمك بوون و تازە تووشبووەکان کە لە ساڵی 2006 دا دیاریکرابوون . هەستاین بە دانانی گریمانە (hypothesis) یەك ڕێگای کای سکویر کە لە ئاستی 95٪ ی دڵنیایی وپلەی سەربەستی (degree of freedom) 1 دا. **لە ئنجامەکان:** لە ئنجامەکان دەریان خست کە ژمارەی نەخۆشەکان 61 بوون (60 ئافرە ت , 1 پیاو), ڕێژەی ڕوودانی شێرپە نجەی مەمك لە ئافرەتاندا 10.1 بۆ هەریەك لە 100000 ئافرەتی پێگەیشوودا لە ساڵی 2006 دا و زیاترین تەمەنیش کە تیایدا تووش دەبن لە 45-54 ساڵان وە زۆربەی ئافرەتانیش ژنی ماڵەوەن, شوویان کردووە و منداڵیشیان بووە, و شیریش بە منداڵییان دەدەن. لەناو شار و لەشوێنە شارستانیەکاندا دەژین وپێشتریش لە خیزانەکانیاندا کەس بە شێرپە نجەی مەمك تووش نەبووە, هەروەها جگەرەکێشیش نەبوون, وە تێکڕای کێشی لەشییان لە ئاستی ئاسایی زیاترە, و لەناوئەو نەخوشانەشدا ژمارەیەکی کەمیان سەبارەت بە تووشبونیان بە دواداچوونیان بە ڕێگای تیشك و سونار(شە پۆلەکانی سەروو دەنگ) کردووە لە ئەوەداکە نەخۆشییەکانیان دیاری بکرێت. توێژینەوەی شانەکان سەلماندویەتی کە جۆری شێرپە نجەی Invasive ductal carcinoma زیاتر لە ناویاندا دووبارە بووەتەوە, 11 (18٪) لە نەخۆشەکان ڕوویەڕووی چەکی کیمیاوی بوونەتەوە لە ساڵی 1988 دا. **دەرئە نجام:** ڕێژەی ڕوودانی شێرپە نجەی مەمك لە ئافرەتاندا (10.1) ە بۆ هەر 100000 ئافرەت لە ساڵی2006 دا, ئەمەش لە چاوخۆیدا ڕێژەیەکی کەمە.

دراسة أولية حول معدل حدوث سرطان الثدي في محافظة السليمانية لسنة 2006

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الخلاصة

نظرة عامة: ان سرطان الثدي من اكثر سرطانات المكان المحدد (site-specific tumors) شيوعا عند النساء. ان معدل حدوث سرطان الثدي في السليمانية لم يتم حسابه قبل سنة 2006, لذا فان هدف هذه الدراسة هو ايجاد هذا المعدل لسنة 2006 بالاضافة الى معرفة بعض الجوانب الاخرى للمرض. **المرضى و طرق البحث:** تم عمل استبيان لجمع المعلومات من مرضى سرطان الثدي المشخصين حديثا في السليمانية لسنة2006, وقمنا بوضع فرضية(hypothesis) ليتم اختبارها بطريقة كاي سكوير عند مستوى ثقة 95% ودرجة حرية (degree of freedom) 1. **النتائج:** لقد بينت النتائج ان عدد المرضى هو 61 (60 نساء و رجل واحد), وأن معدل حدوث سرطان الثدي لدى النساء هو 1 و10 لكل 100000 امرأة بالغة قي سنة 2006 وأن المجموعة العمرية الاكثر اصابة هي 45-54 سنة, وأن معظم النساء هن ربات بيوت, متزوجات, منجبات, مرضعات لاطفالهن, يعشن في مركز المدينة والمناطق الحضرية, وليس لهن تأريخ عائلي لسرطان الثدي, وهن غير مدخنات, ولهن معدل كتلة جسم اعلى من المستوى الطبيعي, وأن عدد قليل من المصابات قمن باجراء التحري عن الاصابة بواسطة الاشعة السينية والموجات فوق الصوتية قبل تشخيص المرض. لقد اثبت الفحص النسيجي ان السرطان القناتي المنتشر(invasive ductal carcinoma) هو الاكثر تكرارا بينهن, وأن 11 (18%) من المصابات كن قد تعرضن الى الاسلحة الكيمياوية في سنة 1988. **الأستنتاج:** أن معدل حدوث سرطان الثدي الثدي لدى النساء هو1 و10 لكل 100000 امرأة بالغة قي سنة 2006 وهو معدل منخفض نسبيا.

Received , 2/4/2008 , Accepted , 5/11/2008

وەرگیرا لە 2/4/ 2008دا ، پەسەندکرا لە 5/11/2008دا