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Breast Cancer Risk Trends of Iraqi Women

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Abstract

Background: Breast cancer (BC) are one of the significant prevalence malignances among Iraqi women, which ranked as the number one cancer documented in all provinces. Although there is a rising incidence in the frequencies of BC, there were not enough studies conducted on the incidence's frequencies over the Iraqi women in Thi-Qar provinces. It is well-known that incidence rates are informative. Analysis of tendencies would advantage in planning and organizing programs for control cancers incidence. **Objective:** The objective of the following study is to calculate the risk of BC using updated data from the cancer registries in the Iraqi health ministry and document its tendencies that released in different periods. **Materials and Method:** Data on incidence rates of BC were obtained from cancer registries of Iraq for the period between 2009 and 2015. Annual percent change in incidence and risk in terms of one in the number of women likely to develop cancer was estimated for both cancers' types in five cities in Thi-Qar province. **Results:** The incidence of BC ages group (45-49), (50-54) and (60-64) were significantly increased, while the age group (15-19) were significantly decreased. On the other hand, the higher increase in the incidence of BC in 2015 was reported to be 84 and 29 cases in Al-Nassiriya and Al-Shatra cities, respectively. **Conclusion:** Al-Refaey region recorded a decline in the incidence of BC, which is contrary to the observation in other cities, which showed an increase in breast cancer. On the other hand, the north side of the city which known to be more contaminated with pollution has higher incidence rate.

Keywords: *Breast cancer, cancer Age groups, Thi-qar cities*

Introduction

Breast cancer (BC), until today, is the most prevalent cancer diagnosed in women worldwide. BC ranks second, and cervical cancer ranks seventh according to the incidence of malignancies globally [1]. Western countries have reported a specific decline in BC trends and incidence, while it is still a significant issue in developing countries.

International Agency for research cancer (IARC) has narrated that female breast cancer is a heterogeneous disease and responsible about 11.6% of total cancer incidence, and documented to be a commonly diagnosed cancer and ranked as the highest occurrence of all females cancer types and as number one leading death for women worldwide [1]. BC is the main prominent cancers sites amid Iraqi women with 13,4420 incident cases, 338,010 five yearly prevalence (Iraqi cancer registry 2009-2015).

The molecular biology reasons that underlay the breast cancer causes are variable. However, a higher number of scientists have documented that BRCA1 and BRCA2 are the two main tumor suppressor genes that are linked to breast cancer [2]. Moreover, ZHX3 gene has been linked to be down regulated in breast cancer [3]. The rest of the ZHX family can also be disturbed in cancer [4].

Mercifully, breast cancer is exceedingly treatable if diagnosed at earlier stages, but it might be extreme if identified at later stages [5]. In Asia, and particularly in the middle east, there is a climbing frequency of breast cancer even though they migrated to western countries decades ago. [6]. Counter to the latest downturn in the breast cancer episode in Western nations, the occurrence in Iraq has been increasingly growing. The predicted

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number of Iraqi's community in 2015 is 36,933,714 included 18,659,573 males and 18,274,141females. (Ministry of planning / Central Statistic Organization). The quantity of breast cancer in Iraq which is 3763 cases in 2009 as it documented in the cancer registry data distributed by the Iraqi cancer board, has reached a terrifying number in 2015, so breast cancer boosted to be second female mortal cancer in Iraq. In 2015, 143 cases were registered as positive breast cancer in Thi-Qar exemplified by 11.7% of all cancer cases displayed in the city. These data shift us to focus on the next step towards examining the epidemiology and the ground that underline the breast cancer bias. BC patients can persist if they diagnosed at earlier stages. Therefore, there is an increasing incidence of breast cancer death for women living in the rural as compared to women living in the city.

Materials and Method

Data on prevalence rates of BC was obtained from the yearly book series issued by the Iraqi Cancer Board (ICB) at the Ministry of Health. The ICB is reliable for collecting the information related to every newly diagnosed cancer patient in both government and private hospitals and clinics. There were eighteen Population-based cancer registries for the years 2009- 2015. ICB brings out a comprehensive yearly report having various data summaries, for example, the occurrence and fatality rates. The approachability of data in different cities of the country depends on the year a particular registry came into the network of ICB and or preliminaries of the record in a specific area. Data for the years 2009-2015 were prepared for the eighteen provinces. Though the ICB cancer registry was established in 1990, the International classification of diseases (ICD) coding used was as per ICD. Age-specific annual cancer incidence rates for either sex in different registries for breast and cervical cancer sites for ages in the range of 15-64 years were used for computations. I focused in my project on breast cancer cases for the two separate registries which are 2009 and 2015 for the whole country were used for trend analysis. I centered my study on the age groups (15-19), (20-24), (25-29), (30-34), (35-39), (40-44), (45-49), (50-54), (55-59), (60-64) and (65-69). These data were plotted and analyzed using Excel.

Thi-Qar province breast cancer incidence for the period between 2009-2015 was plotted and statistically analyzed. Moreover, I compare the extent between the five cities that geographically belong to Thi-Qar province, which is Al-Nassiriya, Al-Refaey, SookAl-Shiookh, Al-Jabesh and Al-Shatra. For assessing trends, exponential regression analysis was performed on age-adjusted rates (AAR) of incidence for breast sites in various registries. The common hazard is the probability that somebody will be diagnosed with cancer through a particular age time in the absence of any competing cause of death.

Nonetheless, APC in incidence would give better knowledge. The risk statistics based on frequency is not a replacement of incidence rate itself. The cumulative risk as one in number of persons developing cancer is an easily understandable statistics for public health communications for the respective governments and the use by the policymaker.

I focused on my analysis on examining women aged (12-70 years) and categorized according to the age groups like 15-39, 40-49, 50-59, 60-69, and 70+ years.

Statistical Analyses

All statistical analyses were performed using SPSS statistical software.

Results

Iraq breast cancer incidence over six years periods:

The BC cases were increased over the six years period (2009-2015). The elevation was documented to be significant between the group ages (30-34) which showed p*=0.05, (40-44) p*=0.04, (45-49) p**=0.005, (50-54) p**=0.002, (60-64) p**=0.004, (65-69) p*=0.03 figure (1).

Thi-qar breast cancer incidences

In 2009, 97 cases were reported in Iraq, which represent 16.28% of all the cancer cases that have been reported in this year. On the 2015 report, Thi-Qar reported having 143 cases which represented 11.7% among all types of cancers reported in this year. I think it should be 133 because the summation of all cities new cases is 133, not 143. By this, the percentages would be 10.7%.The comparison of Thi-qar cities has shown that Al-Nassiriya has reported to have significant increased p*=0.04, Al-Refaey has no differences, Sook Al-Shiookh reported decreased in the incidence, Al-Jabaish has few numbers of cases but statistically considered significant. Finally, Al-Shatra has 18 cases in 2009 and

increased to be 29 in 2015, statistically is considered significant increased p*=0.04 (Figure 2).

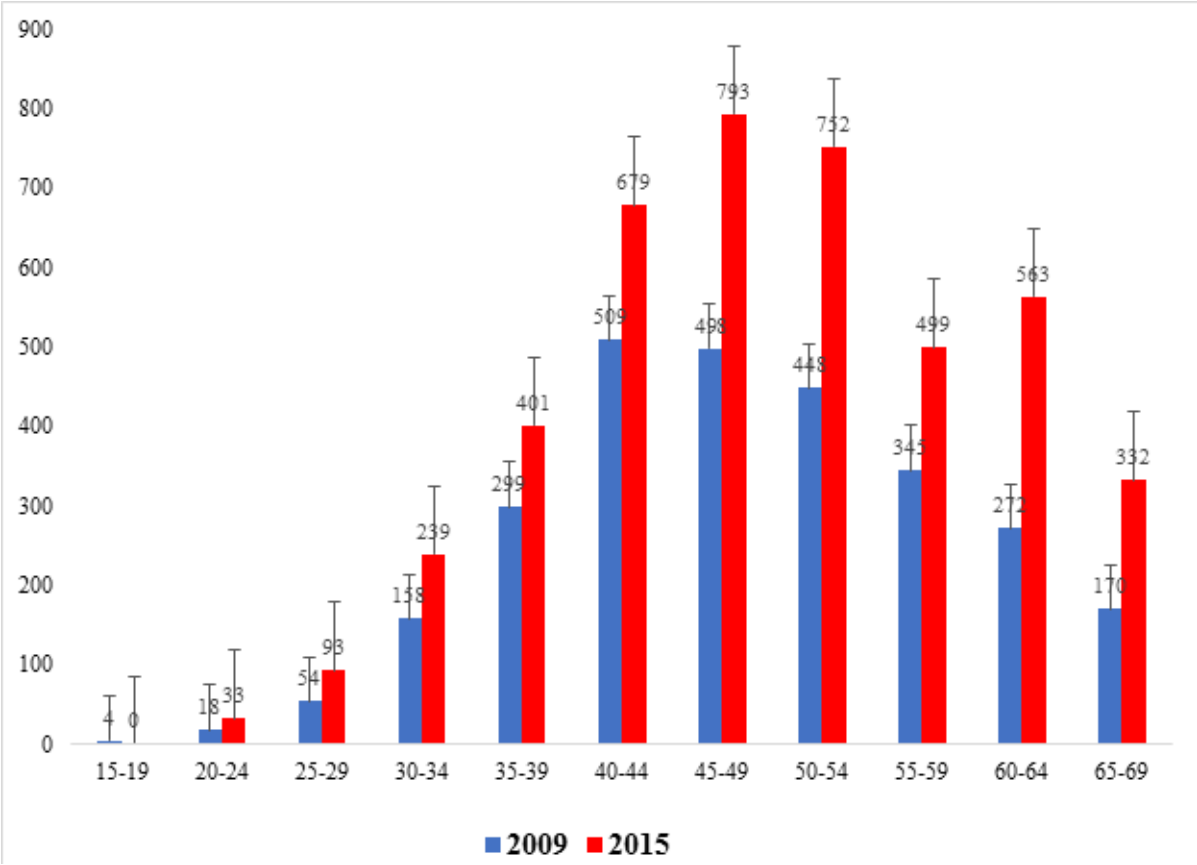

Figure 1: The significant increase in the breast cancer incidence in Iraqi women detected in four age groups

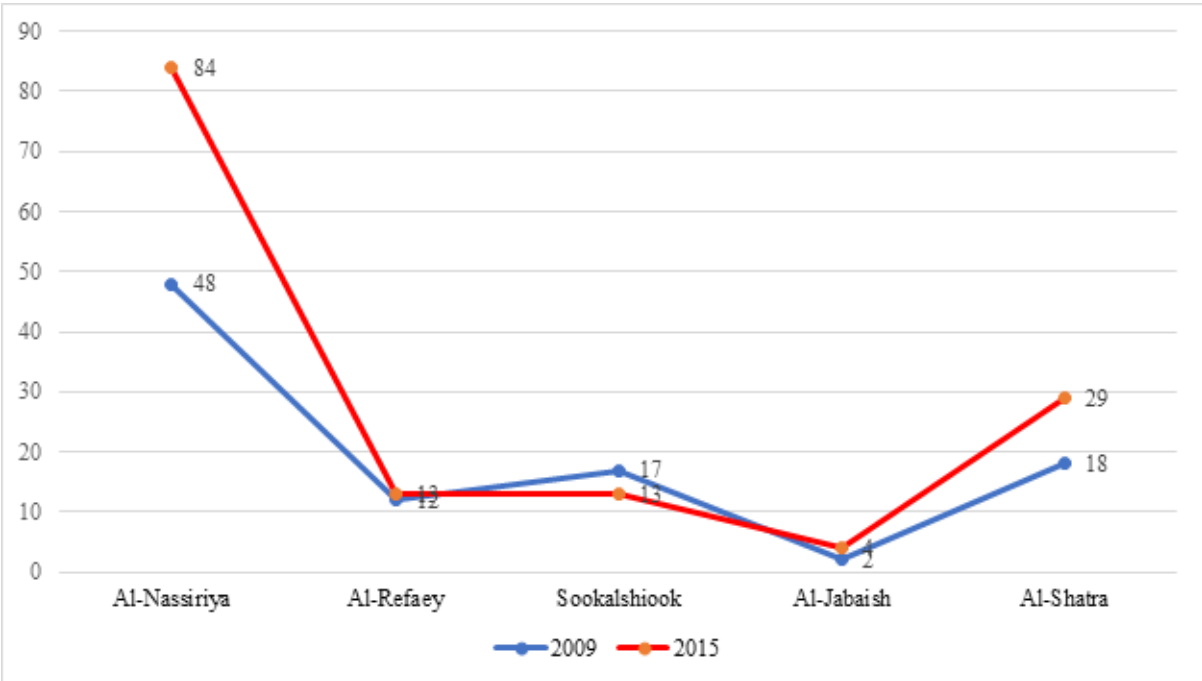

Figure 2: Thi-qar districts distribution of breast cancer over six years periods

Discussion

We still scratching the surfaces in term of learning the epidemiological characteristics of breast cancer in

Iraq. The ICB has used Can Reg4, while my study has investigated the data using SPSS. The study documents notified trends of breast cancer up to the recent year of 2015 on data is achievable by Iraqi board of cancer. The hazards as one in the number of women progress breast cancer are interpreted for all provinces in Iraq for 2009 and 2015.

The data in figure (1) suggested that Cancer registries propose that the age 15 is rarely getting cancer which might be because the high immune system for women in this age and it is the beginning of feminine hormonal to be produced. These finding is coming along the data that been reported by [7] who found that BC is highly variable upon menopausal status, body mass index and the activity of the immune system.

Cities in Thi-qar such as Al-Refaey and sookalshiookh did not show any significant increase in the breast cancer incidence. On the contrast, Al-Nassiriya and Al-Shatra observed a significant increase in the risk for breast cancer (figure 2).

In the destiny, we are looking for an extensive case-control study that can follow the patients since they have been diagnosed with the disease and support them in regulating their blood parameters, body mass and their response to the chemotherapy or radiation. Moreover, several genes have been studied universally such BRACA1 and BRACA2 [2].

Conclusion

My study significantly highlighted the dramatic increase in the number of breast cancer patients via the six-year study periods in the whole country in general and in specific in Nassiriya. The increased was spectacular in the highly polluted cities, including Nassiriya and Shatra. My project highlighted the need to establish a cancer center in Shatra since it is statistically more prone to have double the number of cases in the next six years period. The increased knowledge among the physicians about breast cancer clinical exhibitions early laboratory diagnosis and information in society will help to lessen the morbidity and mortality correlated with disease.

List of abbreviation	Full definition
ICB	Iraqi Cancer Board
BC	Breast cancer

Ethical Clearance: The study is a part of regular university of Sumer observation.

Conflict of Interest: the author has no conflict of interest.

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