Original research

The incidence, age at diagnosis of breast cancer in the Iraqi Kurdish population and comparison to some other countries of Middle-East and West

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HIGHLIGHTS

- Incidence of breast cancer in Iraqi Kurds is lower than other nations of Middle-East.
- Kurdish women get breast cancer in younger age than the women in the west.
- The highest age-specific rate was reported at age group 45–49 years in Iraqi Kurdish.
- A significant proportion of breast cancer occurs in premenopausal Kurdish women.

ARTICLE INFO

ABSTRACT

Background: Studies on breast cancer among Iraqi Kurdish are limited. The incidence of breast cancer is lower, more common in younger age and a significant proportion of cases occur in premenopausal women. The aims of this study are to estimate the age-standardized incidence rate, age-specific rates and their comparison with some countries of Middle-East and West, and clarify the association of family history and premenopausal status with breast cancer. **Materials and methods**: This retrospective case control study was conducted in Sulaimanyah governorate (North of Iraq). Data were collected regarding demographical profile of 536 patients who were registered in Hewa Hematology and Oncology Hospital during 2011−2013, and 496 age-matched controls. **Results**: There were 536 cases of breast cancer, 526 of them were female. The age range was 20−82 years. The mean age at diagnosis was 49.42 ± 11.66 years compared to control 46.7 ± 10.2 ($p < 0.001$, 95% CI: 1.7−3.7). The age-standardized rate was 17.9/100,000 Kurdish women population/year. Five year age-specific rates show the peak incidence for the age group 45−49 years (79.3/100,000). A significant percentage of patients were premenopausal at the time of diagnosis, which is account 55.52% of cases compared to control 59.67% ($p = 0.53$). About 13.49% of cases have family history of breast cancer compared to control 3.2% ($p = 0.02$). **Conclusion**: Among Kurdish people in Iraq, the incidence of breast cancer is less than Middle-East and Western countries with higher incidence in younger age group than western society, but similar to Middle-East countries. More than half of Kurdish women with breast cancer are premenopausal.

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1. Introduction

The breast cancer is the most common cancer in women worldwide and the commonest cause of cancer death in women [1,2]. predominantly in the industrialized countries [3]. The incidence of breast cancer in developing countries is lower than in their western counterparts [2]. Unfortunately in Iraq there are no precise

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statistics about breast cancer, and because of limited data published internationally the studies are largely based on western knowledge, while the Iraqi women are substantially different from western women from many aspects, including genetic background, lifestyle, and culture. The impression of Iraqi Kurdish physicians dealing with breast cancer is that it presents at an earlier age and more common in premenopausal women. In both the Middle-East and West, breast cancer is the most commonly diagnosed cancer among females [4,5]. Breast cancer rates are increasing among developing countries of Middle-East, including Egypt, Lebanon, Syria, Jordan, Iran, Iraq, and Saudi Arabia [6–10]. Even though the incidence of breast cancer in Middle-East countries is less than the west, which is ranging between 22 and 71/100,000 women population [4,5,8–12]. In Middle-East countries, the majority of breast cancer cases were diagnosed at younger age [6,8,13]. About 1/3 of breast cancer in Middle-East countries were diagnosed among women aged 40–49 years [6,14]. In Asia, the incidence of breast cancer peaks among premenopausal women in their forties, whereas among postmenopausal women in western countries it peaks in their sixties. In developed countries breast cancer is mainly a disease of postmenopausal women [2]. The main aims of our study are to estimate the age-standardized incidence rate and age-specific rates of breast cancer among Iraqi Kurdish women and their comparison to some other countries of Middle-East and West, and therefore our objective was to evaluate the association of family history and premenopausal status with breast cancer in case control analysis.

2. Materials and methods

A retrospective case control study was conducted on Kurdish women in Sulaimanyah governorate (north of Iraq) who diagnosed as breast cancer during 2011–2013 (Three complete calendar years). Patients ($n = 526$ females) and Control ($n = 496$). We obtained data of patients with breast cancer who were registered in Hewa Hematology and Oncology Hospital, which is the only institute for collecting data on cancer patients in Sulaimanyah governorate. Data were collected regarding demographical profile of patients including age, sex, residency, nationality, date of diagnosis, occupation, menopausal status and family history. The same information was taken from the control subjects. We excluded Arab patients and Kurdish patients who were living outside Sulaimanyah governorate, but they were seek medical help and registered in Hewa Hospital. The total number of population in this governorate with their age and sex who were living throughout this period were obtained from Sulaimanyah Statistics Office. Statistical analysis was performed by using (SPSS version 21) statistical program. Qualitative data were expressed as number and percentage, while quantitative data were expressed as mean $\pm$ standard deviation (SD). Probability Value ‹ 0.05 was regarded as a statistical significant value. We calculated mean age $\pm$ SD and compared to control. Age-standardized rate and age-specific rates were expressed as per 100,000 population, then compared with rates in some countries of Middle-East and West. Proportions of premenopausal women and who have positive family history were compared to the control.

3. Results

In 536 patients with breast cancer who were registered in Hewa Hematology and Oncology Hospital during 2011, 2012, and 2013. In 2011 (178 cases), 2012 (184 cases), and in 2013 (174 cases) were registered. There were 526 female patients and 10 male patients. The age range was 20–82 years and the mean age was 49.4 ± 11.66 years compared to control 46.7 ± 10.2 ($p‹0.001$, 95% CI: 1.7–3.7) with a median age of 48 years (Fig. 1). No case was reported below 20 years during this period. The age-standardized incidence rate (ASR) was 17.9/100,000 Iraqi Kurdish women population/year (Fig. 2).The ASR in 2011 was 18.3, in 2012 was 18.5, and in 2013 16.9. Five year age-specific rates were calculated, the peak incidence rate for the age group 45–49 years (79.3/100,000 women). The lowest age-specific rate was in age group 20–24 years, then increasing gradually till reach the highest rate, and then decreasing (Fig. 3, Table 1). Out of 526 female patients, 292 of them were premenopausal at the time of diagnosis, which is account 55.52% of cases compared to control 59.67% ($p = 0.53$). Out of 526 female patients, 71 of them have positive family history of breast cancer which is account 13.49% of them compared to control 3.2% ($p = 0.02$).

4. Discussion

In analysis of our data, the age range was 20–82 years, we have no case report below 20 years, because breast cancer is extremely
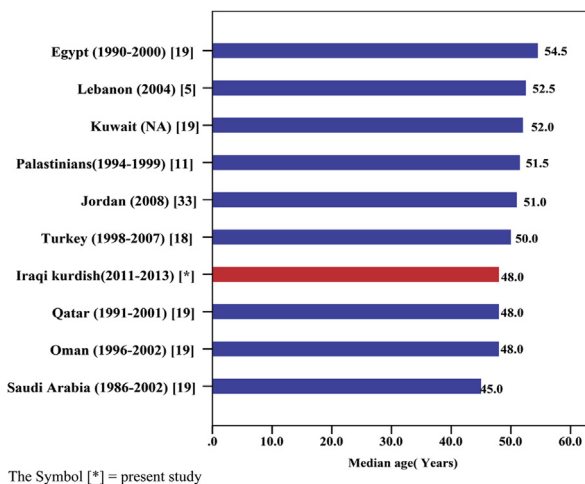

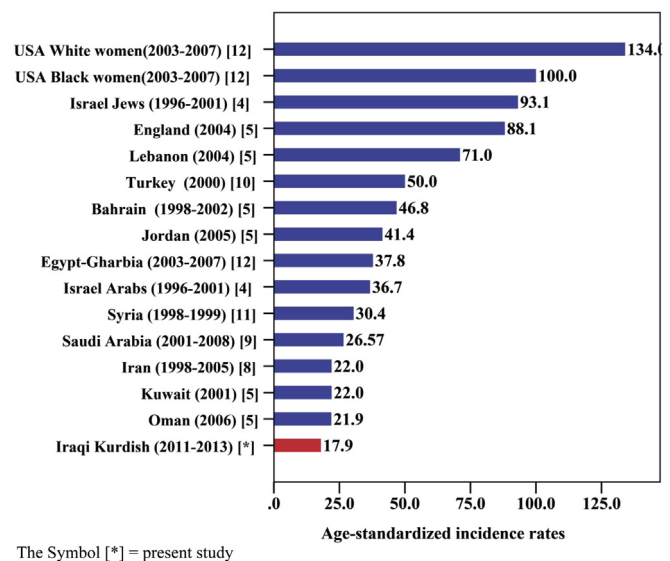**Fig. 1.** Median age of breast cancer among Iraqi Kurdish in comparison with Middle-East countries [33].

Fig. 2. Age-standardized incidence rate among Kurdish females in Iraq compared to other countries.