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Ruaa S Abd

Al-Elweiya Maternity
Hospital, Iraq

Mustafa H Ibrahim

Al-Elweiya Maternity
Hospital, Iraq

Jawad K Al-Diwan

College of Medicine, Baghdad
University, Baghdad, Iraq

Opportunistic breast cancer screening: Personal experience

Ruaa S Abd, Mustafa H Ibrahim and Jawad K Al-Diwan

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Abstract

Background: Breast cancer is a significant global public health issue, with early detection being a critical challenge. Screening asymptomatic women through mammography enables early disease detection. In Iraq, an organized breast cancer screening program is yet to be established, although it is crucial to prevent the spread of breast cancer in the country.

Objectives: This study aims to evaluate the results of opportunistic mammography and report breast cancer cases among employees from various Iraqi ministries who visited the early detection clinic for breast cancer in Baghdad.

Methods: A cross-sectional study was conducted with 100 Iraqi women from different ministries who attended Al Elweiya Maternity Teaching Hospital. Data were collected through direct interviews and review of case records. All participants underwent mammography, with results categorized according to the ACR/BIRADS lexicon.

Results: Among the participants, 78% were aged ≥ 40 years and had a high educational level. Seventy-five percent were married, and 33% had a positive family history of breast cancer. Mammography results showed that 82% had normal or benign lesions (BIRADS 1, 2), 16% were reported as BIRADS 0, and 2% had probably benign lesions (BIRADS 3).

Conclusion: Opportunistic mammography screening was effective in detecting breast cancer. Promoting breast cancer screening can play a crucial role in its early detection. Establishing nationwide breast cancer control programs with close follow-up and appropriate treatment strategies is essential.

Keywords: Opportunistic screening, breast cancer, mammography

Introductions

Breast cancer is a prevalent issue in public health worldwide and a significant health challenge in developing nations ^[1]. Breast cancer is the predominant form of cancer among women in Iraq, representing approximately one third of all recorded cancer cases ^[2]. Moreover, diagnoses of breast cancer in younger age groups often occur at late stages ^[3]. Detecting breast cancer at an early stage is difficult, and it is usual for the illness to be diagnosed late in medium and low income nations ^[4]. The use of mammography to screen asymptomatic women enables the early discovery of breast cancer, increasing the chances of successful treatment ^[5]. The majority of guidelines advise mammographic screening for adults between the ages of 40 and 74 who have an average risk ^[6, 7]. Breast cancer screening programs have been instituted in several industrialized nations, resulting in a decline in both mortality and the incidence of advanced cancer. In Iraq, the Ministry of Health, in partnership with the World Health Organization (WHO), began the national program for early diagnosis of breast cancer in 2000 ^[1]. The implementation of a structured breast cancer screening program, which is essential for preventing the spread of breast cancer in the country, has not yet been developed ^[10]. This study aimed to analyse the outcomes of opportunistic mammography and document instances of breast cancer among personnel from several Iraqi ministries who visited the early detection clinic for breast cancer in Baghdad.

Method

A cross-sectional study was conducted from February 1, 2024, to June 1, 2024, involving 100 employed Iraqi women from various ministries who attended Al Elweiya Maternity Teaching Hospital. Data collection involved direct interviews and review of case records, with the results expressed as frequencies and percentages. All participants underwent mammography, and the findings were categorized according to the ACR/BIRADS lexicon as follows:

Corresponding Author:

Ruaa S Abd

Al-Elweiya Maternity
Hospital, Iraq

- **Birads 0:** Incomplete mammographic study requiring further imaging evaluation.
- **Birads 1:** Normal study (Negative).
- **Birads 2:** Benign lesions.
- **Birads 3:** Probably benign lesions needing short interval follow-up.
- **Birads 4:** Suspicious lesions requiring fine needle aspiration cytology (FNAC) or biopsy.
- **Birads 5:** Highly suggestive malignant lesions necessitating FNAC or biopsy followed by appropriate surgical action.
- **Birads 6:** Known cases of breast malignancy needing short interval mammography and suitable action based

on mammographic results.

Results

Table 1 presents the socio-demographic characteristics of the studied sample (N=100). Among the participants, 78% are aged 40 years or older and have an educational level higher than secondary, while 22% are younger than 40 years and have an educational level of secondary or less. Regarding occupation, 84% are employees of ministries, and 16% are employees of authorities. Marital status shows that 75% are married, and 25% are unmarried. Additionally, 33% have a positive family history of breast cancer, whereas 67% do not.

Table 1: Socio-demographic characteristics of the studied sample

Variable	Frequency	Percentage (%)
Age		
<40	22	22
≥40	78	78
Total	100	100%
Education		
≤Secondary	22	22
>Secondary	78	78
Total	100	100%
Occupation		
Employees of Ministries	84	84
Employees of Authorities	16	16
Total	100	100%
Marital Status		
Married	75	75
Un Married	25	25
Total	100	100%
Family History of breast cancer		
Positive	33	33
Negative	67	67
Total	100	100%

The findings of opportunistic mammography for the study sample are displayed in Table 2. The radiological results were categorised according to the ACR/BIRAD System. Out of the total number of females (82), 82% of them had normal or benign lesions. Specifically, 71% were classified as negative (BIRADS 1), indicating no abnormalities, while

11% were recorded as benign lesions (BIRADS 2). 16% of the females had a BIRADS 0 result, indicating the need for more imaging. Ultimately, 2 out of 100 subjects were found to have lesions that were most likely benign, as indicated by a BIRADS score of 3.

Table 2: Results of opportunistic mammography among the studied sample

BIRAD	Definition	Frequency	Percentage (%)
0	Needs additional imaging	16	16%
1	Negative	71	71%
2	Benign finding	11	11%
3	Probably benign	2	2%
Total		100	100%

The ultimate diagnosis of 16 cases that had BIRADS 0 on mammography and require supplementary assessment is presented in Table 3. 7 females had BIRADS 1 (Negative), 4 females had BIRADS 2 (benign lesions), 2 females had BIRADS 3 (presumably benign), and 3 females had

BIRADS 4 (suspicious) on supplementary U/S. No pathological testing (tissue biopsy) was conducted for the cases that held suspicion (BIRADS 4) in order to determine the definitive diagnosis.

Table 3: Final diagnosis of 16 cases that need supplementary assessment

Mammography BIRADS 0	U/S BIRADS	Final Diagnosis +/- Pathology Result	No.
Benign Suspicious	BIRADS 1	Negative	7
	BIRADS 2	Simple cyst	2
	BIRADS 2	Duct ectasia	2
	BIRADS 3	Fibroadenoma	2
	BIRADS 4	Tissue biopsy was not done	3
Total			16

Discussion

Breast cancer is the most prevalent malignancy and the second primary cause of mortality among the Iraqi population, following cardiovascular diseases^[11]. The early detection of breast cancer is a critical factor in determining the disease's prognosis, particularly in low and middle-income countries^[12, 13]. The current study found that 78% of the sample was highly educated and over the age of 40. This is consistent with a previous study conducted in Iraq, which reported that two-thirds of the participants who attended opportunistic screening were over the age of 40, potentially reflecting the age pyramid of the population^[14]. Additionally, another study found that women who had completed more than 12 years of education were more likely to seek health care through opportunistic mammography^[15]. In this study, 33% of the sample that participated in opportunistic screening had a positive family history of breast cancer. This is consistent with the findings of previous studies conducted in Iraq^[16, 17]. However, it is significantly higher than the percentage of Saudi participants who attended the breast cancer screening center in the kingdom^[18]. This likely indicates that our participants were more aware. The ACR/BIRADS lexicon and BIRADS categories assessment were used to grade the mammographic findings found in this study. These assessments are intended to be consistent with specific management recommendations that improve the quality of medical practice^[14]. Incomplete assessment (BIRADS 0) is typically administered for screening examinations that necessitate additional imaging evaluation. In this study, 16% of participants were identified as BIRADS 0 and were advised to undergo additional evaluations, including supplementary ultrasound and pathological testing if necessary. The supplementary ultrasound results indicated suspicious findings in three participants (BIRADS 4). However, no tissue biopsy was conducted for these participants, which restricts the comprehensive evaluation necessary to confirm the final diagnosis. Therefore, the overall detection rate of breast cancer in our research was 0%. This could be attributed to the absence of follow-up for the participants, which was a result of the lack of coordination between health institutions and other administrations involved in the opportunistic screening, as evident in this study. The overall detection rate of breast cancer in the analyzed samples was 0.5%, 0.5%, and 1.3%, respectively, according to previous studies conducted in Iraq, Malaysia, and Thailand^[14, 5, 19]. The age distribution of the studied populations, the selection criteria of the study sample, the experience of the screening center, and the competence of the working staff with the equipment used could all contribute to the variations in the detection rates of breast cancer, in addition to racial, ethnic, and genetic influences^[14].

Conclusion

Opportunistic screening of breast cancer through mammography was effective in the detection of breast cancer in asymptomatic, seemingly healthy females. Promoting opportunistic breast cancer screening could be crucial for its early detection, as well as for increasing community awareness and practices regarding this significant health issue. In order to establish and improve nationwide breast cancer control programs, it is essential to implement appropriate treatment strategies, closely monitor

positive cases, and coordinate with health institutions and other relevant ministries.

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