



# International Journal of Advanced Community Medicine

E-ISSN: 2616-3594  
P-ISSN: 2616-3586  
[www.comedjournal.com](http://www.comedjournal.com)  
IJACM 2024; 7(3): 27-32  
Received: 13-04-2024  
Accepted: 22-05-2024

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## Review of breast clinic outcome at Al Yarmouk teaching Hospital, Baghdad, 2022-2023

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DOI: <https://doi.org/10.33545/comed.2024.v7.i3a.321>

### Abstract

**Background:** Recent attention has focused on breast-related disorders, particularly breast cancer. Approximately 2.1 million women are diagnosed with breast cancer each year, and it causes the most cancer-related deaths in women. Other breast illnesses include hypertrophy, radial scars, cysts, fibroadenomas, intraductal papillomas, sclerosing adenosis, Phyllodes tumours, and more. Some breast disorders induce early pain, while others do not. Thus, frequent breast exams are necessary to discover these problems early, especially those that do not cause discomfort.

**Objectives:** To Review of Breast Clinic Outcome at Al Yarmouk Teaching Hospital, in Baghdad, Iraq in 2022-2023.

**Method:** An extensive retrospective cross-sectional research was done on 8528 breast clinic patients at Alyarmoke Teaching Hospital, Baghdad, from 1/6/2022 to 1/6/2023. Our analysis included sociodemographic characteristics, imaging reports (mammography and ultrasonography with BI-RADS scores and features), and clinical data. Cytology, pathology (FNA, core biopsy).

**Results:** The one-year screening findings of asymptomatic women in Baghdad, showing the number and percentage of patients in different BIRAD groups and those suspected or confirmed to have breast cancer. However, 36.82% of 8528 asymptomatic women, 3140, were tested. 437 individuals had BIRAD ratings of 1, 2, or 3, indicating benign results. This represents 5.12% of the sample. 2693 individuals had BIRAD values of 4 or 5, indicating malignancy. This represents 86.76% of tested individuals. Of 2693 BIRAD [4, 5] patients, 131 were suspected of having breast cancer. This represents 1.54% of the sample. Ten of 131 suspected breast cancer patients were diagnosed. This is 0.18 percent of the sample.

**Conclusion:** A large majority of breast mass patients and those receiving FNA and true-cut biopsies had benign diseases, whereas a lesser percentage had malignant tumours. In breast mass patients, age does not affect cancer diagnosis.

**Keywords:** Breast cancer, mammography, ultrasound, cytology, review, outcome

### Introduction

Breast diseases represent a significant healthcare challenge worldwide, with medical imaging playing a crucial role in their management [1]. Breast self-examination (BSE) is a technique used by individuals to check for any palpable or visible changes in their breast tissues, serving as an early detection method for breast cancers or tumors [2]. Breast diseases include inflammatory conditions, benign growths, and malignant tumors. Globally, approximately 200,000 cases of breast diseases are diagnosed annually [3]. These conditions show variations between genders and across different countries and ethnic groups [4]. Benign diseases, which are more prevalent than malignant and inflammatory ones, can be categorized into epithelial inflammatory proliferations, stromal abnormalities, tumors, and structural deformities [5]. Fibroadenomas are the most common type of benign breast disease, accounting for nearly half of all benign cases [6]. These conditions typically appear during the second decade of life and peak in prevalence during the fourth and fifth decades of life [7]. Over the past decade, the incidence of breast diseases has significantly increased, with mammography playing a key role in diagnosing both benign and malignant breast diseases [3, 8]. Breast cancer is the second leading cause of cancer-related deaths globally, following lung cancer. In 2010, it accounted for 28% of all cancer cases in the United States [9]. According to the latest Iraqi Cancer Registry, 4,115 cases of breast cancer were recorded among an estimated population of 32.5 million, accounting for 19.5% of newly diagnosed malignancies and 34% of female cancers, with an incidence of 22 per 100,000 females [10]. Breast conditions that require medical attention include pathological or physiological nipple discharge.

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Approximately 10 to 15% of women diagnosed with benign breast disease exhibit pathological nipple discharge. When dealing with a breast mass or cyst, histological diagnosis is necessary, while breast pain (mastalgia) is the most prevalent symptom among women [11]. A study conducted in Illinois, Chicago, found that 36% of women diagnosed with breast cancer reported experiencing breast pain as their only symptom [11]. The main goal for patients with symptomatic breast pain, according to contemporary study methods, is to rule out a diagnosis of cancer. Various factors related to the etiology of mastalgia include large breast size, changes in diet and lifestyle, hormone replacement therapy (HRT), ductal ectasia, and mastitis. Premenstrual breast pain has been linked to increased water and salt retention [12, 13]. Mammograms are recommended for women over 40 years of age, while ultrasounds are preferred for women younger than 40 years. These services are offered either upon the woman's request or her doctor's recommendation, following the Comprehensive Evaluation Protocol for Early Breast Detection Clinics, which includes mammography and/or ultrasound [14]. Early detection procedures are the best strategy for detecting breast cancer early and improving survival chances. At the beginning of 2000, the Iraqi Ministry of Health, together with the World Health Organization, established a national program for the early detection of breast cancer. However, a systematic examination program organized by the international community has not yet been implemented due to the lack of services in health institutions [15].

**Aim of the study**

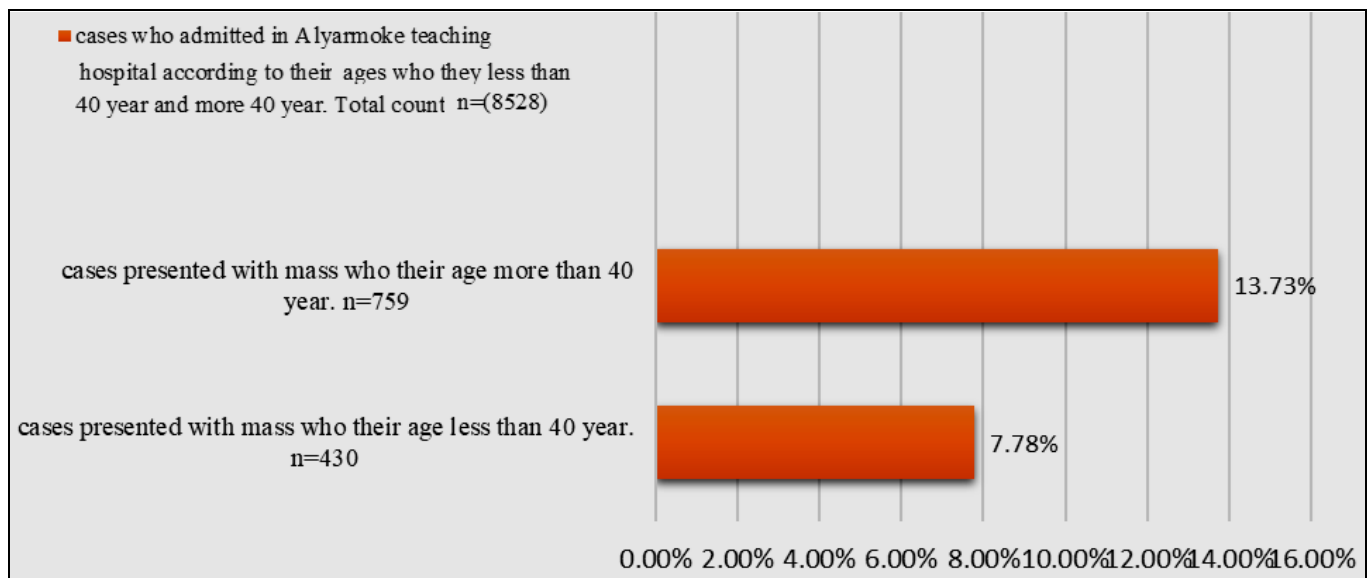
To Review of Breast Clinic Outcome at Al Yarmouk Teaching Hospital, in Baghdad, Iraq in 2022-2023.

**Method**

In this retrospective cross-sectional study, we conducted a comprehensive review of data from 8528 patients treated at Alyarmoke Teaching Hospital, in the city of Baghdad, from 1/6/ 2022 to 1/6/2023. Our analysis encompassed sociodemographic factors, imaging reports (including mammography and ultrasonography with BI-RADS scores and their respective features), and clinical information Cytology, pathology, (FNA, core biopsy). The collected data were meticulously organized, coded, and subjected to analysis. The Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA) version 26.0 was used for data analysis. The results of our analysis were presented in tables and charts, providing a clear visualization of the findings. To examine associations, we utilized the chi-squared test, with statistical significance set at a p-value of  $\leq 0.01$

**Results**

Figure 1 presents the total number of cases who presented to the hospital with breast masses 1189 (21.51%) categorized by age, with ages greater than 40 years and less than 40 years. Among them, 759 (13.73%) had breast masses and were over 40 years old, while 430 (7.78%) had breast masses and were under 40 years old.



**Fig 1:** Cases who presented with mass, in Alyarmoke teaching hospital according to their ages who they less than 40 year and more 40 year. No. of pt who presented with mass = 1189 of (8528)

Table (1): This table summarizes the screening results of asymptomatic women in Baghdad over a one-year period, providing a breakdown of the number and percentage of patients across different BIRAD categories and those suspected or confirmed to have breast cancer. However, 3140 patients were screened, representing 36.82% of the total sample of 8528 asymptomatic women. 437 patients received BIRAD scores of 1, 2, or 3, which are generally indicative of benign findings. This accounts for 5.12% of

the total sample. 2693 patients received BIRAD scores of 4 or 5, suggesting a higher suspicion of malignancy. This represents 86.76% of those who were screened. Out of the 2693 patients with BIRAD [4, 5] results, 131 were suspected of having breast cancer. This is 1.54% of the total sample. Out of the 131 patients suspected of having breast cancer, 10 were confirmed to have breast cancer. This constitutes 0.18% of the total sample.

**Table 1:** Category of patients screened in asymptomatic women (Total n = 8528) in Baghdad (01/06/2022 - 01/06/2023)

Parameters	n	%
Total No. of Patients Screened	3140	36.82
Patients Screened with Results of U/S, Mammography BIRAD <sup>[1-3]</sup>	437	5.12
Patients Screened with Results of U/S, Mammography BIRAD <sup>[4, 5]</sup>	2693	86.76
No. of Patients with Suspicious Breast Cancer from 2693	131	1.54
No. of Patients with Breast Cancer from 131 Patients Screened with Results of U/S, Mammography BIRAD <sup>[4, 5]</sup>	10	0.18
U/S = Ultrasound, BIRAD = Breast Imaging Reporting and Data System, n = number of samples Pts = patients, No.=number		

Table (2): This table provides a clear overview of the distribution of breast disease diagnoses among the patients, highlighting the prevalence of both benign and malignant conditions. With normal findings number of patients were 2304 (27.01%) and this is the most common result, indicating that over a quarter of the patients had no detectable breast disease. Related with benign cases, fibroadenoma, number of patients were 1136 (13.00%), fibroadenomas are common benign breast tumors, making up a significant portion of the diagnoses. Fibrocystic Diseases, number of patients 980 (11.49%), these benign changes in breast tissue were also common among the patients. Mastitis, number of patients 988 (11.58%), this infection of the breast tissue was a common diagnosis. Benign Dilated Duct, number of patients 640 (7.60%), this benign condition involving the milk ducts was frequently diagnosed. Lipoma, number of patients 404 (5.00%), lipomas, benign fatty tumors, were relatively common. Fibro Fatty Tissue number of patients 344 (4.00%), this benign condition was diagnosed in a notable number of patients. Fat Necrosis number of patients 308 (4.00%), often resulting from injury, this benign condition was also fairly

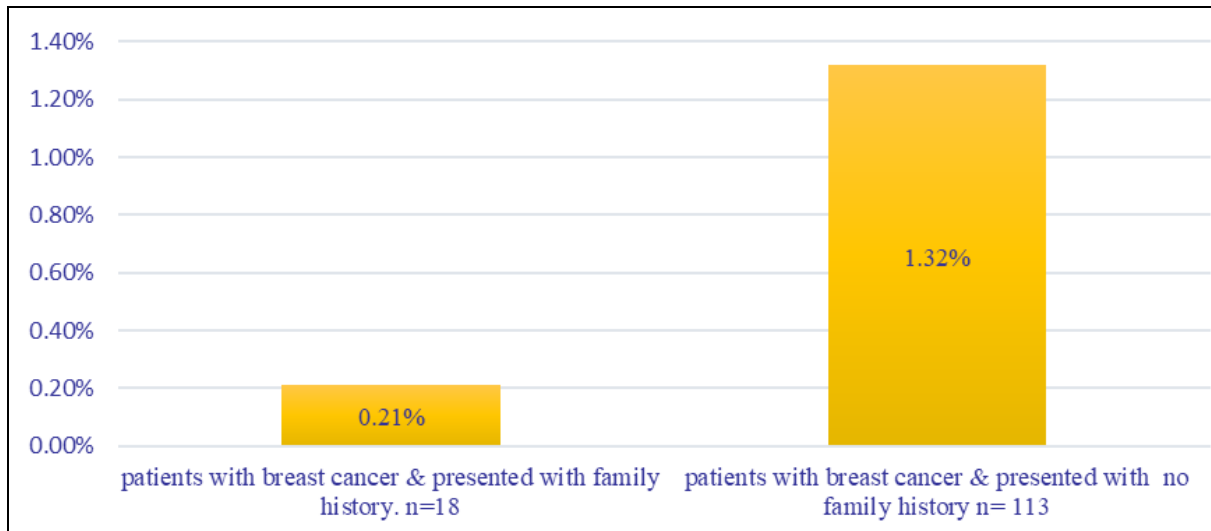
common. Abscess number of patients 340 (3.98%), Abscesses, which are collections of pus due to infection, were found in a significant number of patients. Papillary Lesion number of patients 331 (3.88%), these growths in the breast ducts were a notable finding. Duct Ectasia number of patients 300 (3.52%), this benign condition involving the milk ducts was present in a considerable number of patients. Simple Cyst number of patients 280 (3.28%), simple, fluid-filled cysts were diagnosed in a significant portion of the patients. Oil Cyst number of patients 240 (2.81%), these benign cysts were relatively common. Benign Looking Axillary LN number of patients 160 (1.87%), benign-appearing lymph nodes in the armpit were found in a significant number of patients. Gynecomastia number of patients 120 (1.41%), this benign enlargement of male breast tissue was also diagnosed in a notable number of patients. Carcinoma number of patients 131 (1.53%), breast cancer was diagnosed in a smaller, but significant portion of the patients. Phyllodes number of patients 22 (0.26%), this rare type of tumor was diagnosed in a small number of patients. Total number of patients 8528 (100.00%), the table accurately accounts for all patients in the sample size.

**Table 2:** Shows final diagnosis of breast diseases in patients attended in Alyarmoke teaching Hospital (n = 8528)

Diagnosis	Number of Patients (n)	Percentage (%)
Fibroadenoma	1136	13.00
Fibrocystic diseases	980	11.49
Simple cyst	280	3.28
Lipoma	404	5.00
Oil cyst	240	2.81
Mastitis	988	11.58
Abscess	340	3.98
Benign dilated duct	640	7.60
Phyllodes	22	0.28
Gynecomastia	120	1.41
Fibro fatty tissue	344	4.00
Fat necrosis	308	4.00
Carcinoma	131	1.53
Benign looking axillary LN	160	1.87
Duct ectasia	300	3.52
Papillary lesion	331	3.88
Normal findings	2304	27.01
Total	8528	100.00

In Figure 2, which displays the number of patients diagnosed with breast cancer, some of them have no family history of cancer, while others have a medical history of

cancer. Among those without a family history of cancer, 113 (1.32%) were diagnosed with cancer. In contrast, 18 (0.21%) had cancer and had a family history.



**Fig 2:** Patients who diagnosed as breast cancer with family history and without family history n=131

In Table 3, the data reveals the following characteristics of patients who underwent FNA with true-cut biopsy at the hospital 1267 patients (14.85%) underwent FNA with true-cut 701 patients (8.22%) did not present with a mass but had BIRADS [4, 5] results 566 patients (6.64%) presented with a mass and had BIRADS [4, 5] results 6093 patients (71.44%)

received benign results from the FNA with true-cut procedure 131 patients (1.54%) received malignant tumor diagnoses. Among those diagnosed with cancer, 29 patients (0.34%) were under 40 years old, while 102 patients (1.19%) were over 40 years old.

**Table 3:** Total Number of patients presented with F.N.A and true cut with their characteristics (June 2022 - June 2023)

Parameters	Number of Patients (n)	Percentage (%)
No. of patients presented with F.N.A and true cut	1267	14.85
Pts presented with BI RAD [4, 5]	701	8.22
Pts presented with mass and BI RAD [4, 5]	566	6.64
Pts who were their results benign	6093	71.44
Pts who were their results malignant	131	1.54
Pts who were their results malignant, and their age < 40	29	0.34
Pts who were their results malignant, and their age > 40	102	1.19
U/S = Ultrasound, BIRAD = Breast Imaging Reporting and Data System, n = number of samples, Pts = patients		

Table 4 displays the relationship between the percentage of cancer patients who entered with a mass and their age, comparing those under 40 years old to those over 40 years old. The table reveals no significant relationship with a p-value of  $p= 0.3455$  at a significance level of less than  $p \leq 0.01$ . Among patients who had a mass and were under 40 years old but were not diagnosed with cancer, there were

430 (5.04%) individuals. On the other hand, approximately 759 (8.90%) had a mass and were not diagnosed with cancer, and their ages were over 40 years. Additionally, 2 (0.023%) individuals had no mass and were diagnosed with cancer, and they were under 40 years old, while 8 (0.093%) individuals had no mass and were diagnosed with cancer, and their ages were over 40 years old.

**Table 4:** Total number of patients presented with mass and cancer related with age range between < 40 years and > 40 years (1/6/2022 - 1/6/2023)

Age Range	Patients < 40 Years (n, %)	Patients > 40 Years (n, %)	p-value
Patients who were their results mass	430 (5.04%)	759 (8.90%)	0.3455 N.S
Patients who were their results cancer	2 (0.023%)	8 (0.093%)	
$p \leq 0.01$ , N.S = non-significant			

**Discussion**

The majority of patients, 1189 (21.51%), presenting with breast masses were above 40 years, as shown in Figure 1. Among them, 759 (8.90%) were over 40 years old, while 430 (5.04%) were under 40. This age group is also recommended for breast cancer screening [16]. This suggests that practitioners are following guidelines for breast imaging. Table 1 summarizes the screening results of 3140 asymptomatic women in Baghdad over a one-year period. Out of 8528 women, 36.82% were screened. 437 patients received BIRAD scores of 1, 2, or 3 (5.12%), indicating benign findings, while 2693 patients received scores of 4 or 5 (86.76%), suggesting higher suspicion of malignancy.

Among those with BIRAD 4 or 5, 131 were suspected of having breast cancer (1.54%), and 10 were confirmed (0.18%) [17]. Table 2 provides an overview of breast disease diagnoses among patients. The most common result was normal findings in 2304 patients (27.01%). Benign cases included fibroadenoma (1136, 13.00%), fibrocystic diseases (980, 11.49%), mastitis (988, 11.58%), benign dilated duct (640, 7.60%), lipoma (404, 5.00%), fibro fatty tissue (344, 4.00%), fat necrosis (308, 4.00%), abscess (340, 3.98%), papillary lesion (331, 3.88%), duct ectasia (300, 3.52%), simple cyst (280, 3.28%), oil cyst (240, 2.81%), benign looking axillary LN (160, 1.87%), gynecomastia (120, 1.41%), carcinoma (131, 1.53%), and phyllodes tumor (22,



0.26%). The total number of patients was 8528 [18], [19]. The majority of breast cancer patients had no family history of the disease, as shown in Figure 3. Among those diagnosed, 113 (1.32%) had no family history, while 18 (0.21%) did. Studies have shown that family history is a significant risk factor for breast cancer, though most women who develop it have no known family history [20-23]. Other factors such as oral contraceptive use, smoking, and menopause may also contribute [24]. Table 3 reveals characteristics of patients who underwent FNA with true-cut biopsy. Of 8528 patients, 1267 (14.85%) underwent the procedure. Among them, 701 (8.22%) had BIRAD 4 or 5 results without a mass, and 566 (6.64%) had both a mass and BIRAD 4 or 5 results. Benign results were received by 6093 patients (71.44%), while 131 (1.54%) were diagnosed with malignant tumors. Among the cancer diagnoses, 29 patients (0.34%) were under 40, and 102 (1.19%) were over 40. The difference in age affects the examination results due to breast tissue density [18, 19]. Table 4 examines the relationship between cancer diagnosis and age among patients with a mass. There was no significant relationship ( $p=0.3455$ ). Patients under 40 with a mass but not diagnosed with cancer numbered 430 (5.04%), while those over 40 numbered 759 (10%). Only 2 individuals (0.023%) without a mass were diagnosed with cancer under 40, and 8 (0.093%) over 40 [16].

### Conclusion

Regular breast screening and treatments like FNA and true-cut biopsies were the main reasons for breast imaging. More people had BI-RADS values of 4 and 5 than 1, 2, and 3. Masses and malignant tumours were more common in those over 40 than under 40. Many individuals had ultrasonography and mammographic BI-RADS findings but were not tested. Thus, we urge more extensive measures and increased investigation, as some instances may have been missed during the COVID-19 pandemic.

### Conflict of Interest

Not available

### Financial Support

Not available

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**How to Cite This Article**

Hameed TM, Alameri HD, Rajab KK. Review of breast clinic outcome at al yarmouk teaching hospital, baghdad, 2022-2023. *International Journal of Advanced Community Medicine* 2024;7(3): 27-32.

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