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# Presentation of woman With Breast Cancer in Babylon governorate

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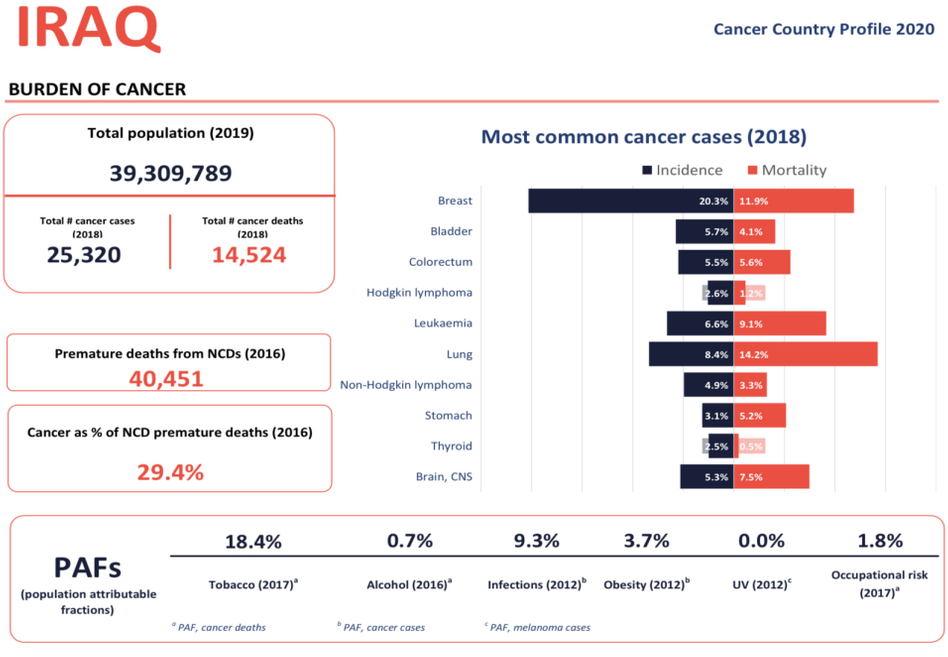
# Chapter 1 introduction

# INTRODUCTION

## Epidemiology

Cancer is the second leading cause of death worldwide, according to the WHO. Cancer was responsible for 10 million deaths in 2020, and it was the cause of about 1 in 6 deaths worldwide. 1 Within the Eastern Mediterranean Region, cancer is the fourth-ranked cause of death after cardiovascular diseases, infectious diseases, and injuries. 2 In 2008, the average cancer incidence in industrialized countries was more than 80 per 100,000, but it was less than 40 per 100,000 in developing countries. 3 The Iraqi Cancer Registry revealed that in 2012, among an estimated population of 32,500,000, a total of 21,101 new cases of cancer were registered; 9,268 were in men and 11,833 were in women. 4.

Globally, breast cancer is the most frequent cancer among women and accounts for about 23% of all female cancers. 5 Breast cancer is the second leading cause of death among all types of cancers in women (15% of all cancer deaths) after lung cancer (26% of all cancer deaths). 6 According to Alwan, 7 breast cancer is the most common type of cancer in Iraq.



According to the WHO, the incidence of breast cancer is increasing in developing countries, which may be the result of increased urbanization, increased life expectancy, and adoption of western lifestyles. 8

Early detection of breast cancer in Iraq was established in 2001 by the Ministry of Health. Their efforts were then supported by other ministries and by the development of the National Cancer Research Program. 9

The latest report from the International Union Against Cancer showed that Iraq has made significant progress toward providing cancer health services by extending the Iraqi National Registry to become a population-based registry, launching public campaigns that encourage early detection, encouraging physical activity and control of tobacco use, and providing better access to cancer diagnosis and treatment service free of charge.10

Many new centers were built in Baghdad and other provinces to provide better services and easier access to health care for patients throughout the country. With the expansion of the National Cancer Control Program, new studies are now being conducted to evaluate the breast cancer screening program in Iraq. 11

When a patient presents with breast cancer, the usual pattern of intake includes gathering data to construct sociodemographic, clinical, and pathologic profiles. Here, we describe the clinical profile or the patient's history, which includes tumor history, past medical and surgical history, social history, family history, gynecologic history, and tumor stage, tumor grade, and. Staging of the tumor is

also essential for proper treatment and for determining survival rates. 11

Identifying the pattern of presentation of patients with breast cancer is a key part of developing effective methods of cancer control and patient management programs in Iraq.11

## Anatomy

The breasts are specialized accessory glands of the skin that secrete milk. They are present in both sexes and share similar structure in males and immature females. The nipples are small and surrounded by a colored area of skin called the areola (Fig. 3.14). The breast tissue consists of a system of ducts embedded in connective tissue that does not extend beyond the margin of the areola.12

### Blood Supply ,

The arterial supply to the breasts includes the perforating branches of the internal thoracic artery and the intercostal arteries. The axillary artery also supplies the gland via its lateral thoracic and thoracoacromial branches. The veins correspond to the arteries.12

### Lymph Drainage

The lymph drainage of the mammary gland is of great clinical importance because of the frequent development of cancer in the gland and the subsequent dissemination of the malignant cells along the lymph vessels to the lymph nodes.

The lateral quadrants of the breast drain into the anterior axillary or pectoral group of nodes (Fig. 3.16) (situated just posterior to the lower border of the pectoralis major muscle). The medial quadrants drain by means of vessels that pierce the intercostal spaces and enter the internal thoracic group of nodes (situated within the thoracic cavity along the course of the internal thoracic artery). A few lymph vessels follow the posterior intercostal arteries and drain posteriorly into the posterior intercostal nodes (situated along the course of the posterior intercostal arteries); some vessels communicate with the lymph vessels of the opposite breast and with those of the anterior abdominal wall. 12

## Histology

Before puberty, the mammary glands in both sexes are com- posed only of lactiferous sinuses near the nipple, with very small, branching ducts emerging from these sinuses. In girls undergoing puberty, higher levels of circulating estrogens cause the breasts to grow as a result of adipocyte accumulation and elongation of the duct system.13

In nonpregnant adult women each mammary gland lobe consists of many lobules, sometimes called terminal duct lobular units (TDLU). Each lobule has several small, branch- ing ducts, but the attached secretory units are small and rudi- mentary (Figure 22–25). Lactiferous sinuses are lined with stratified cuboidal epithelium, and the lining of the lactifer- ous ducts and terminal ducts is simple cuboidal epithelium with many myoepithelial cells. Sparse fibers of smooth muscle also encircle the larger ducts. The duct system is embedded in loose, vascular connective tissue, and a denser, less cellu- lar connective tissue separates the lobes. In the premenstrual . 13

phase of the reproductive cycle, connective tissue of the breast becomes somewhat edematous, making the breasts slightly larger.

The areola, or skin surrounding and covering the nipple, contains sebaceous glands and abundant sensory nerves and is continuous with the mucosa of the lactiferous sinuses. The areola contains more melanin than skin elsewhere on the breast and

darkens further during pregnancy. Connective tis- sue of the nipple is rich in smooth muscle fibers that run paral- lel to the lactiferous sinuses and produce nipple erection when they contract. 13

## Risk factors

Certain factors increase the risk of breast cancer including increasing age, obesity, harmful use of alcohol, family history of breast cancer, history of radiation exposure, reproductive history (such as age that menstrual periods began and age at first pregnancy), tobacco use and postmenopausal hormone therapy. Approximately half of breast cancers develop in women who have no identifiable breast cancer risk factor other than gender (female) and age (over 40 years). 14

Approximately half of breast cancers develop in women who have no identifiable breast cancer risk factor other than gender (female) and age (over 40 years). 14

Family history of breast cancer increases the risk of breast cancer, but most women diagnosed with breast cancer do not have a known family history of the disease. Lack of a known family history does not necessarily mean that a woman is at reduced risk. 14

Certain inherited high penetrance gene mutations greatly increase breast cancer risk, the most dominant being mutations in the genes BRCA1, BRCA2 and PALB-2. Women found to have mutations in these major genes may consider risk reduction strategies such as surgical removal of both breasts or chemoprevention strategies. 14

## Signs and symptoms

Most people will not experience any symptoms when the cancer is still early hence the importance of early detection.

Breast cancer can have combinations of symptoms, especially when it is more advanced. Symptoms of breast cancer can include:

a breast lump or thickening, often without pain . change in size, shape or appearance of the breast . dimpling, redness, pitting or other changes in the skin . change in nipple appearance or the skin surrounding the nipple (areola) abnormal or bloody fluid from the nipple.

Breast cancers may spread to other areas of the body and trigger other symptoms. Often, the most common first detectable site of spread is to the lymph nodes under the arm although it is possible to have cancer-bearing lymph nodes that cannot be felt.

Over time, cancerous cells may spread to other organs including the lungs, liver, brain and bones. Once they reach these sites, new cancer-related symptoms such as bone pain or headaches may appear. 15

## Treatment

Treatment for breast cancer depends on the subtype of cancer and how much it has spread outside of the breast to lymph nodes (stages II or III) or to other parts of the body (stage IV).

Doctors combine treatments to minimize the chances of the cancer coming back (recurrence). These include:

1_surgery to remove the breast tumour

2_radiation therapy to reduce recurrence risk in the breast and surrounding tissues

3_ medications to kill cancer cells and prevent spread, including hormonal therapies, chemotherapy or targeted biological therapies.

Treatments for breast cancer are more effective and are better tolerated when started early and taken to completion.16

## Aim of the study

The study aims to presentation of patients with breast cancer in Babylon governorate from 20\3\2024 to 20\4\2024 .

# Chapter 2
# Patients and method

## Chapter 2 patients and method

This is a  cross-sectional study that was performed in the Babylon Center for treatment of tumors  in 2024. The target population was female patients with breast cancer who came to the Center for treatment and follow-up. A sample of 56 patients was drawn from this population. Self-evaluation forms were used in interviews with the patients to collect personal and sociodemographic data; clinical and histologic characteristics of the patients tumors  were obtained from their medical records. Ethical approval was obtained

Data were collected and analysed by Microsoft excel and the tables were written in Microsoft word .

We classified samples into four groups according to their presentation and the results were analysed in relaion to these four groups .

# Chapter 3
# Results and discussion

# chapter 3 . Results

| | Lump | pain | Lump + inverted nipple | Lump + pain | Total cases |
|---|---|---|---|---|---|
| count | 38 | 6 | 8 | 4 | 56 |
| proportion | 67.8 % | 10.7 % | 14.2 % | 7.1 % | 100 % |

**Table (1) study groups and their proportions**

| | all | pain | lump | Lump + pain | Lump + inverted nipple |
|---|---|---|---|---|---|
| Age | 51.41 | 51.66 | 51.1 | 52.25 | 52.25 |
| Age at menarche | 12.94 | 13.16 | 12.84 | 12.75 | 13.77 |
| Age at menopause | 477.41 | 45.8 | 48.04 | 48.33 | 45.66 |

**Table (2) The mean of Age of participants, their Age at menarche, Age at menopause in each group (in years )**

| | Lump + inverted nipple | pain | lump | Lump + pain | all |
|---|---|---|---|---|---|
| House wife | 75 % | 83.3 % | 63.1 % | 100 % | 69.6 % |
| employee | 25 % | 16.7 % | 36.9 % | 0 % | 30.4 % |

**Table (3) Occupation distribution in the study sample**

| | Lump + inverted nipple | pain | lump | Lump + pain | All participants |
|---|---|---|---|---|---|
| rural | 12.5 % | 66.6 % | 21 % | 50 % | 26.7 % |
| urban | 87.5 % | 33.3 % | 79 % | 50 % | 73.2 % |

**Table (4) Address of study participants in each group**

| | Lump | pain | Lump + inverted nipple | Lump + pain | all |
|---|---|---|---|---|---|
| Has Hx of CA breast | 34.2 % | 0 % | 25 % | 50 % | 30.3 % |
| Don’t have Hx of CA breast | 65.8 % | 100 % | 75 % | 50 % | 69.7 % |

**Table (5) Family history of breast cancer**

| | Lump | pain | Lump + inverted nipple | Lump + pain | all |
|---|---|---|---|---|---|
| Has Hx of other malignancies | 23.6 % | 16.7 % | 25 % | 0 % | 21.4 % |
| Don’t have Hx of other malignancies | 76.3 % | 83.3 % | 75 % | 100 % | 78.5 % |
| total | 38 | 6 | 8 | 4 | 56 |

**Table (6) Family history of other malignancies**

| | Lump | pain | Lump + inverted nipple | Lump + pain | all |
|---|---|---|---|---|---|
| Stage 1 | 23.6 % | 33.3 % | 37.5 % | 25 % | 26.4 % |
| Stage 2 | 50 % | 33.3 % | 62.5 % | 50 % | 50 % |
| Stage3 | 18.4 % | 33.3 % | 0 % | 0 % | 16.5 % |
| Stage 4 | 7.8 % | 0 % | 0 % | 25 % | 7.1 % |

**Table (7) Tumor staging in study participants**

## Discussion

Breast cancer is a significant health concern worldwide, and understanding the presentation of this disease in specific regions can provide valuable insights for diagnosis, treatment, and public health interventions (17) . In this study, we investigated the presentation of breast cancer in women from Babylon Governorate, focusing on various factors such as symptoms, age at menarche, occupation, address, family history, and staging.

Our findings regarding the presentation of symptoms (Table 1) revealed that the majority of women (67.9%) presented with a lump, which is consistent with previous studies highlighting the prominence of this symptom in breast cancer cases. However, it is worth noting that a notable proportion of women also presented with pain (10.7%) or a combination of symptoms such as lump and inverted nipple (14.3%) or lump and pain (7.1%). These findings suggest the importance of recognizing diverse symptomatology and highlight the need for comprehensive diagnostic approaches. 18

Comparing our study's results with previous research(19), we observed similarities in the prevalence of symptoms among women , indicating consistency with larger population trends. However, it is essential to acknowledge that symptom presentation can vary across different

populations due to cultural, genetic, and environmental factors. Future studies should explore the reasons behind these variations to improve early detection and diagnosis strategies.19

Regarding age at menarche and menopause (Table 2), our study did not find a significant association between these factors and breast cancer presentation in women from Babylon Governorate. Althought their effect as risk factor of breast cancer is well established in previous studies but their effect on the presenting symptom is not clear. 20

Occupation and geographical factors played a crucial role in our study(Table 3). The majority of participants were housewives (69.6%), which could be attributed to the higher proportion of housewives in the general population of Iraq. Comparing occupation groups, we found higher percentages of housewives in all four symptom presentation groups . this results disagree with previous study in USA that shows women in professional and managerial occupations had an elevated breast cancer risk over the next. 21

Analyzing the address of study participants (Table 4), we observed that women who presented with pain were predominantly from rural areas (66.6%), while those with a lump or a lump with inverted nipple were mostly from urban areas (79% and 87.5% respectively). These findings suggest a potential correlation between geographical factors and breast cancer presentation. previous studies shows that Urban environments may expose women to different risk factors, such as lifestyle choices and environmental pollutants, which could influence symptom manifestation. Further investigations are necessary to elucidate the underlying mechanisms and determine the generalizability of these findings. 22

Family history of breast cancer and other malignancies (Table 5) revealed that 30% of all cases had a family history of breast cancer, while 21.4% had a family history of other malignancies such as ovarian, lung, or prostate cancer. These figures are consistent with existing literature that highlights

the role of familial predisposition in breast cancer. The identification of individuals with a family history of breast cancer is crucial for implementing targeted screening and prevention strategies. 23

In terms of staging, the majority of women in our study (76.4%) were diagnosed at stage 1 and stage 2. This suggests that a significant proportion of breast cancer cases in Babylon Governorate are detected at an early stage, which is promising for favorable treatment outcomes. It agrees with previous global studies that shows that most breast cancer cases are diagnosed at stage 1 and 2 .(24)

However, it is concerning that a small percentage of women presented at more advanced stages (stage 3 and stage 4), emphasizing the need for improved awareness, early detection programs, and access to quality healthcare services.

It is important to acknowledge the limitations of our study. The sample size was relatively small, which may limit the generalizability of our findings. Additionally, the study was conducted in a specific geographic region, and the results may not be fully applicable to other populations. Future research with larger and more diverse samples is warranted to validate our observations.

**conclusion**, our study provides insights into the presentation of breast cancer in women from Babylon Governorate. The prevalence of symptoms, the impact of age at menarche/menopause, occupation, geographical factors, family history, and staging were investigated. The findings contribute to the existing body of knowledge and highlight the importance of tailored approaches to breast cancer diagnosis, treatment, and prevention in this region. Further research is needed to delve deeper into these factors and develop targeted interventions to improve breast cancer outcomes in Babylon Governorate and beyond.

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