

# Histopathological Study of Breast Cancer among Women in Mosul City-Iraq

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## ABSTRACT

**Aim:** To identify the characteristics of women with Breast cancer in Mosul city in reference to their age at diagnosis, disease stage, grade, and type of tumor

**Methodology:** This study was approved by the ethical research committee at Nineveh health directorate. A cross sectional study was carried out in Mosul city, Al Khansa teaching hospital for the period between 2019 -2020. Information related to the patients were gathered via construct information sheet. Study samples were obtained through biopsies taken from breast surgeries or mastectomy operations. The sample was preserved in formalin solution with a concentration of 10%, followed by treatment with automatic histoquinet tissue, paraffin embedded and sectioned at 3-five microns before staining with H and E.

**Results:** the finding of the present study shows that the most of women beyond to age group (40-50) years and mean age at diagnosis is (47) years. Most of women were in T2, stage III, and grad III, respectively at the diagnosis. The majority of women with noninvasive ductal carcinoma

**Conclusion:** Breast cancer in City of Mosul is relatively low, but it affects the younger age group and is presented with higher pathological grade beyond early stage.

**Keywords:** Breast, Cancer, Mosul, Iraq.

## INTRODUCTION

Globally, unique of the mean top reasons of death is Cancer. Compared to others types of malignancy disease , the breast cancer is the highest threaten of women to still survive<sup>1</sup>.. The early detection and management of this malignant disease is crucial to avoid the development of the disease and decrease its morbidity rates<sup>2</sup>.. The World Health Organization (WHO) reported that 27 million of women will have breast cancer by the year of 2030<sup>3</sup>. Breast cancer is a multifactorial disease and numerous factors increase the rate of to its occurrence<sup>4</sup>. Universal, rise in breast cancer rate denotes a substantial problem on health services<sup>5</sup>.. Despite the progress in the field of diagnosing and treating s of cancer that includes (hormones, chemical and radiological), therapists often rely and trust clinical histopathology studies<sup>6</sup>.. The objectives of current study are to identify the characteristics of women with Breast cancer in Mosul city in reference to their age at diagnosis, disease stage, grade, and type of tumor.

## METHODS

This study was approved by the ethical research committee at Nineveh health directorate. A descriptive study was carried out in Mosul city, Al Khansa teaching hospital for the period between 2019 -2020. Information related to the patients were gathered via construct information sheet. Study samples were obtained through biopsies taken from breast surgeries or mastectomy operations. The sample was preserved in formalin solution with a concentration of 10%, followed by treatment with automatic histoquinet tissue, paraffin embedded and sectioned at 3-five microns before staining with H and E. According to WHO classification, all slides have been reviewed. According to Elston-Ellis criteria, the tumor grading done using measuring three predominant elements: "nuclear morphology (nuclear pleomorphism), differentiation (tubule

formation), and proliferation (mitotic frequency) in line with the Nottingham grading system (NGS)".

## RESULT

The finding of the present study shows that the most of women beyond to age group (40-50) years and mean age at diagnosis is (47) years. Most of women were in T2, stage III, and grad III, respectively at the diagnosis. The majority of women with noninvasive ductal carcinoma.

Fig. 1: Distribution of women according to their age at diagnosis

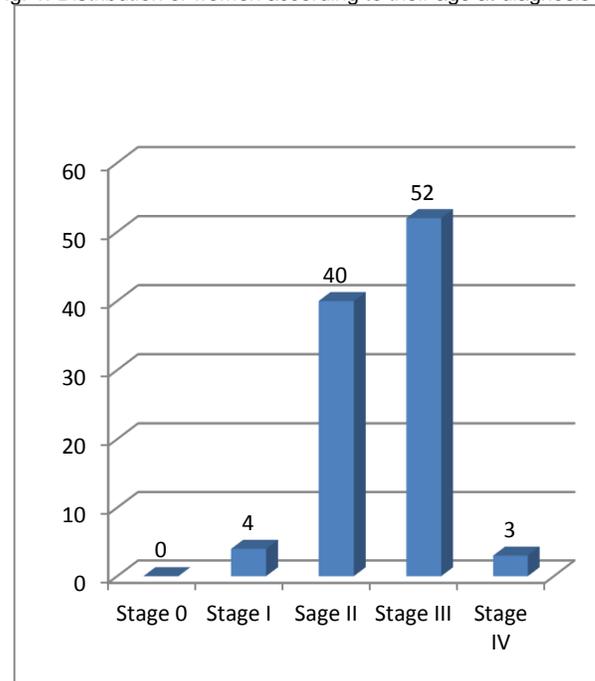


Fig. 2: Distribution of women according to tumor size

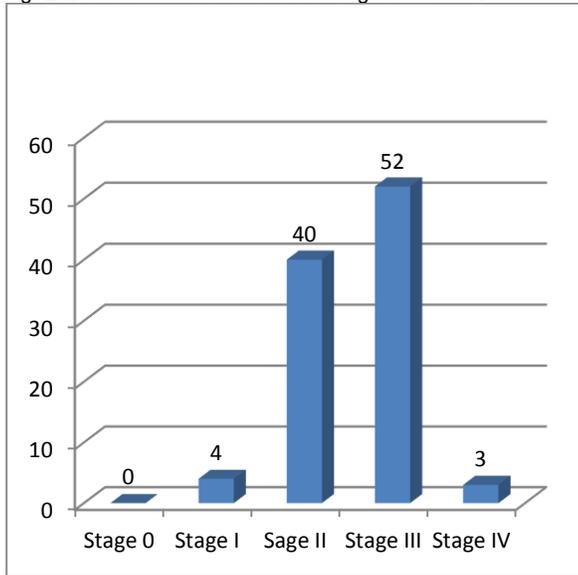


Fig. 3: Distribution of women according to their cancer stage

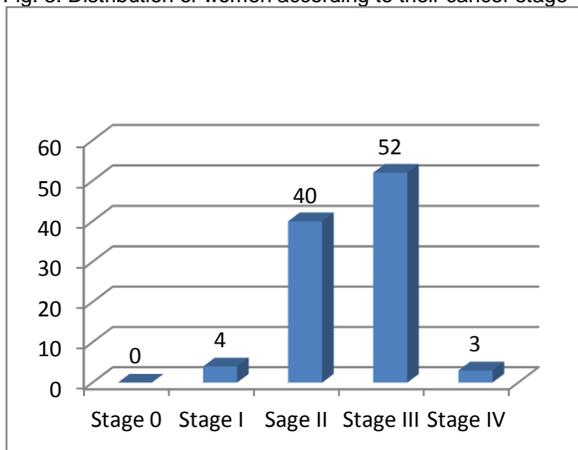


Fig. 4: Distribution of women according tumor grade

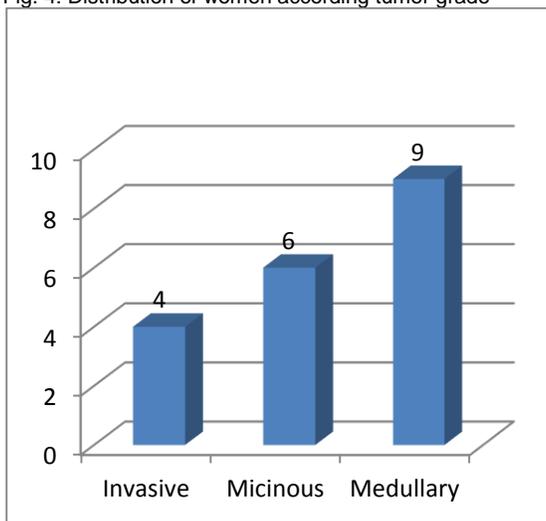
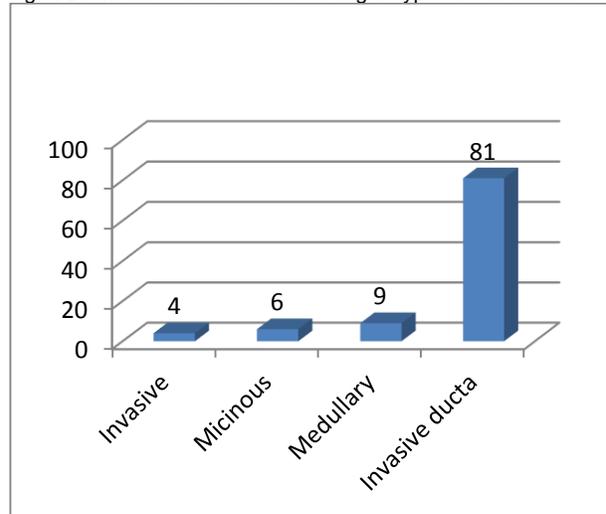


Fig.5: Distribution of women according to types of carcinoma



## DISCUSSION

Centers for Disease Control reported that women over 55 years old are more risk to had cancers and it is expecting to elevate the number of new cases among Americans in next few years. In Iraq, The World Health Organization estimated the number of breast cancer for the last five years (1300) for the year 2018. This result highlights that the mean age of women at the diagnosis is (47) years which is confirmed by earlier stud that conducted in Mosul City<sup>7</sup> and another study that applied in Al Ramadi city the center of Al anbar Province -west of Iraq<sup>8</sup>. The occurrence of Breast cancer among women in early age at diagnosis is not clear when comparted with western women, although there are some clarifications. Initially, the physiological variances between women in the Western countries and the Middle East. Second, there is no health policy for breast cancer City of Mosul like developed countries. For example, European women more than 45 years old referral for mammography every two years. As a result, more young-aged women were affected. Third, nutritional and quality of life as well as the environmental factors differ from developed countries. The occurrence of breast cancer seems to have a sigmoid role in women less than 55 years of age , with 6.6% of all cases diagnosed before age 40, 2.4% diagnosed before age 35, and 1% diagnosed before age 30<sup>9</sup>. Consistently, a study found that the mean age Britain women of at diagnosis was (46 years)<sup>10</sup>. Another study in Pakistan shows that the median age of the patients was 46 years with majority between 36 and 45 years of age<sup>11</sup>. In agreement with the finding of present study other study that applied in Iraq<sup>8</sup>. These study revealed that (12.7%) are grade (I), (44.5%) cases are grade (II), and (42.8) cases are grade (III), and it revealed that cases with grade III<sup>12</sup>, the foremost tumor type was infiltrative ductal carcinomas. Our study comes in agreements with Alwan et.al. study<sup>13</sup> that found Infiltrative invasive ductal carcinoma (not otherwise mentioned NOS) was the most frequently diagnosed histologic form followed by infiltrative lobular carcinoma in both groups (86.5 percent and 8.8 percent compared to 81.5 percent and 10.0 percent

respectively for Iraqi and British tumours). However, there were still significant differences between the two populations ( $p < 0.01$ ). There was also a statistical difference in histological grades; whereas a lower rate of grade I breast carcinomas was found in the Iraqi group as opposed to the British (6.7% versus 16.6%), 67.6% and 25.7% respectively were categorized as II and III among the former, compared to 48.3% and 35.1% among the latter<sup>14</sup>. According to site the types of breast cancer divided into two types Non-Invasive and Invasive Breast Cancer<sup>15</sup>. Lobular in situ carcinoma (LCIS) is less common and is considered a marker for increased risk of breast cancer<sup>16</sup>. Invasive breast cancer cells bursting through the duct and lobular wall and entering the adjacent fatty and connective breast tissues<sup>17</sup>. Oancer can be invasive without being metastatic (spreading) to the lymph nodes or other organs<sup>18</sup>. In this study mucinous tumors were found in 7.5%<sup>20</sup>, and there is association with women age >45. One of the particular Positive prognostic features are Pure mucinous in women with breast cancer<sup>19-22</sup>. Mucinous breast carcinoma is detected via palpation in around half of the women with Breast cancer, whereas in asymptomatic cases the cancer is diagnosed after mammographic screenings<sup>21,22,23</sup>. The majority of MC (89%) presented at the early stages (I and II) with favorable clinicopathologic features. However, the mean age at diagnosis of MC was 48 years in this study, which was much younger than in a study of women in developed countries. Previous studies indicated that MC was diagnosed among women older than 60 years. Breast cancer incidence rates have increased significantly in recent years in the city of Mosul. The average age of affected women (47) also increased significantly during the current decade. within last ten years ago, the mean age of women with breast cancer at diagnosis is (47). There was a similar tendency among the women had MC. Due to limited described cases, further studies needed to clarify the genetic and environmental factors and pathological features of women in City of Mosul.

## CONCLUSION

Breast cancer in City of Mosul is relatively low, but it affects the younger age group and is presented with higher pathological grade beyond early stage.

**Recommendation:** This study findings support growing efforts to establish systematic programs for the management of breast cancer in Iraq.

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**Ethical consideration:** before data collection, an official permission was obtained from the Ministry of Education/ Nineveh Directorate, and Written approval of participants was obtained prior to the start of data collection.

**Conflicts of interest:** Nil

**Source funding:** Self

## REFERENCES

- Jiang, Y., et al., *Breast cancer histopathological image classification using convolutional neural networks with small SE-ResNet module*. 2019. **14**(3).
- Araújo, T., et al., *Classification of breast cancer histology images using convolutional neural networks*. 2017. **12**(6).
- Bardou, D., K. Zhang, and S.M.J.I.A. Ahmad, *Classification of breast cancer based on histology images using convolutional neural networks*. 2018. **6**: p. 24680-24693.
- Momenimovahed, Z., H.J.B.C.T. Salehiniya, and Therapy, *Epidemiological characteristics of and risk factors for breast cancer in the world*. 2019. **11**: p. 151.
- Siegel, R.L., K.D. Miller, and A.J.C.A.C.J.f.C. Jemal, *Cancer statistics, 2020*. 2020. **70**(1): p. 7-30.
- Decker, T., D. Hungermann, and W.J.D.P. Böcker, *Prognostische und prädiktive Faktoren invasiver Mammakarzinome*. 2009. **30**(1): p. 49-55.
- AL-MUKHTAR, S.H., *Risk Factors for Breast Cancer among women in the Mosul City/Iraq: A Case-Control Study*.
- Al-Isawi, A.O.J.J.A.i.B.C.R., *Breast cancer in Western Iraq: clinicopathological single institution study*. 2016. **5**(2): p. 83-89.
- Anders, C.K., et al. *Breast cancer before age 40 years*. in *Seminars in oncology*. 2009. Elsevier.
- Bowen, R., et al., *Early onset of breast cancer in a group of British black women*. 2008. **98**(2): p. 277-281.
- Majeed, A.I., et al., *Screening, diagnosis and genetic study of breast cancer patients in Pakistan*. 2020. **36**(2).
- Freedman, L.S., et al., *Cancer incidence in four member countries (Cyprus, Egypt, Israel, and Jordan) of the Middle East Cancer Consortium (MECC) compared with US SEER*. 2006.
- Alwan, N.A., et al., *Comparative study on the clinicopathological profiles of breast cancer among Iraqi and British patients*. 2018. **11**(1).
- Pinder, S.E., G.C. Harris, and C.W. Elston, *The role of the pathologist in assessing prognostic factors for breast cancer, in Prognostic and Predictive Factors in Breast Cancer*. 2008, CRC Press. p. 16-27.
- Sharma, G.N., et al., *Various types and management of breast cancer: an overview*. 2010. **1**(2): p. 109.
- Logan, G.J., et al., *Molecular drivers of lobular carcinoma in situ*. 2015. **17**(1): p. 76.
- Girish, C., et al., *A review on breast cancer*. 2014. **4**(2): p. 47-54.
- Schurink, B., et al., *Metastatic incidence of (PET) CT positive lung hilar and retroperitoneal lymph nodes in esophageal cancer patients*. 2020.
- Diab, S.G., et al., *Tumor characteristics and clinical outcome of tubular and mucinous breast carcinomas*. 1999. **17**(5): p. 1442-1442.
- Vo, T., et al., *Long-term outcomes in patients with mucinous, medullary, tubular, and invasive ductal carcinomas after lumpectomy*. 2007. **194**(4): p. 527-531.
- Tan, J.Z.Y., et al., *Mucinous carcinomas of the breast: imaging features and potential for misdiagnosis*. 2013. **57**(1): p. 25-31.
- Morand, C., et al., *Pure mucinous carcinomas of the breast: prognostic study including DNA flow cytometry*. 2009. **76**(1): p. 56-62.
- Dhillon, R., et al., *Screen-detected mucinous breast carcinoma: potential for delayed diagnosis*. 2006. **61**(5): p. 423-430.