

<i>University of Baghdad</i>				
<b>College Name</b>	<i>College of Medicine</i>			
<b>Department</b>	<b>Pathology</b>			
<b>Full name as written in passport</b>	<b>Fatima Sabeeh AL Sarraf</b>			
<b>e-mail</b>				
<b>Career</b>	◉ Assistant Lecturer	◉ Lecturer	◉ Assistant Professor	◉ Professor
	◉ Master		◉ PhD	
<b>Thesis Title</b>	<b>Immunohistochemical Expression of ER, PR, Her2/neu and Ki67 in Breast Carcinoma. Clinicopathological Study</b>			
<b>Year</b>	<b>2015</b>			
<b>Abstract</b>	<p><b>Breast cancer is the most frequent cancer in women worldwide.</b></p> <p><b>In Iraq it is the most common cancer among females.</b></p> <p><b>According to the latest Iraqi Cancer Registry in 2010, breast cancer account for approximately one-third of the registered female cancers in Iraq, indicating that the breast cancer is the leading cause of death among females.</b></p> <p><b>Proliferation rates of neoplastic process can provide useful information on prognosis and aggressiveness of individual cancers including breast cancer and can be used to guide treatment protocols in clinical practice.</b></p> <p><b>Ki67 as a proliferative marker has been used to study proliferation rates in breast cancer and other tumors by Immunohistochemistry assessment of nuclear antigen which has a predictive and prognostic significant. Other important prognostic and predictive markers in breast cancer management including Estrogen and Progesterone receptors, Her2/neu have been used to predict the prognosis of breast cancer and to guide its therapy.</b></p> <p><b>Aim of study</b></p> <p><b>1. To evaluate the role of Ki67 as a proliferative index marker through analysing the associations between Ki67 intensity with the well-known clinicopathological parameters (age, breast tumor type, grade, size and lymph node involvement).</b></p>			

**2. To correlate the association of Ki67 with Estrogen receptor, progesterone receptor and Her2/neu expression.**

## **II**

### **Patients, materials and methods**

**This retrospective cross-sectional study was conducted from November**

**2013 to April 2014. A total number of fifty paraffin blocks were collected, (40)**

**blocks belonging to patients with breast carcinoma (all were totally**

**mastectomy), (thirty five cases were invasive ductal carcinoma, four cases**

**invasive lobular carcinoma and one case was mixed type carcinoma) and (10)**

**blocks with benign breast diseases were included. The cases were selected from**

**archive files of the Department of Pathology of the Teaching Laboratories,**

**Specialized surgical Hospital in Baghdad Medical City and private laboratories,**

**and used for the immunohistochemical assessment of oestrogen receptor (ER)**

**and progesterone receptors (PR), Her2/neu and Ki67.**

### **Results:**

**In this study, patients' age were ranged from (22-69) years, for forty**

**malignant cases the age range was (34-69) years with a mean of (50.30±9)**

**(mean± Standard deviation) years and the median age was (49) years, the peak**

**age frequency was in the (35-50) years age group at time of diagnosis. The main**

**histopathological type was invasive ductal carcinoma (87.5%). Grade II and T2**

**were reported in three quarters of the studied cases (30 cases out of 40). Axillary**

**lymph node positive involvement was reported in (72.5%) of cases.**

**For benign cases the age range was (22-60) years old, the mean age was**

**(36.50±13.75) (mean± Standard deviation) years old.**

**Hormone receptors positive malignant cases were (75%) and (72.5%) for**

**estrogen and progesterone receptors respectively.**

**Immunohistochemical expression of Ki67 was positive in (30) cases out of (40)**

**(75%). Ki67 high score were demonstrated in (57.5%) of malignant cases.**

## **III**

**For Her2/neu expression more than (50%) of cases were with score 0, (17.5%) were with score 1+, (12.5%) were with score 2+ and (17.5%) were with score 3+.**

**Regarding molecular subtypes of the malignant cases, Luminal B subtypes was the commonest among studied cases (42.5%).**

**Conclusions:**

- 1. In the current study invasive ductal carcinoma was the commonest histopathological type of breast carcinoma while most of the benign cases were fibrocystic disease cases, with a significant different mean age between malignant and benign cases.**
- 2. In this study Ki67 positive expression was observed in most of the studied malignant cases. Significant correlations were found between Ki67 expression and tumor grade, lymph node involvement and Her2/neu score.**
- 3. Luminal B subtype (Estrogen receptor +ve and /or Progesterone receptor +ve, Her2/neu +ve or Her2/neu -ve with Ki67 high score) was the most common molecular subtype of the studied breast cancer cases.**