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Biological Characteristics of Breast Cancer among Jordanian Women: A retrospective Single Center Cohort Study

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Abstract

Introduction: Breast cancer is a heterogeneous disease that encompasses a wide range of pathological entities and clinical behaviors. It is classified into several subtypes based on their histopathological characteristics, tumor grade and biological features. This classification is important for studying breast cancer etiology, predicting clinical course, and making decisions related to breast cancer treatment. This study aims to identify biological characteristics of breast cancer among a group of Jordanian women who were referred to a breast clinic in a tertiary hospital in Amman.

Methodology: This is a retrospective cohort study that included initially a total of 119 female patients with breast cancer during the period between January 2018 and January 2020 at tertiary hospital in Jordan. Patients' data were retrieved from the electronic health record system including their pathologic reports. Pathological reports were reviewed by the pathologist were histopathological features and tumor biological characteristics were confirmed. Breast cancer cases were classified into different biological subtypes based on surrogate definitions of intrinsic subtypes of breast cancer that was adopted in the 2011 St Gallen Consensus.

Results: A total of 117 patients were available for analysis with a mean age of 55.2 years and age range between 28 and 89 years. Patients were divided into group A (age £50 years; n=50) and group B (age > 50; n=67). The most common tumor was invasive ductal carcinoma (84.6%) followed by invasive lobular carcinoma. Metastatic axillary lymph node involvement was proved in 66.4% and 19 patients had de-novo metastasis. Biologically, the expression of ER, PR and HER2 were 84.1%, 84.1% and 36.7% respectively. Patients younger than 50 years had statistically higher levels of Ki67. Luminal B breast cancer was the most prevalent subtype in our patients.

Conclusion: Luminal B breast cancer is the most common prevalent intrinsic subtype of breast cancer among our patients. The expression of HER2/neu gene is considered high as well as large percentage of patients have high Ki67. Although it is not informative as gene-based assays, IHC-based assays can be utilized for classification of breast cancer based on its biological characteristics at reasonable costs especially in low-middle income countries.

Key words: breast cancer, luminal breast cancer, HER2 receptors, triple negative