

Ki67 Expression, Relation to Breast Cancer Morphology, Molecular Sub-Types, And the Expression of Estrogen, Progesterone Receptors, And HER2 In Sudanese Women

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ABSTRACT

Background: Worldwide 19.3 million new cases of breast cancer (BC) will be diagnosed in 2020, and the disease will claim 10 million lives]. BC incidence rapidly increases globally and varies significantly by country. BC counts 11% of all new cancer cases and 23% of all female malignancies. This study was carried out to evaluate Ki67 expression, its relation to breast cancer morphology, molecular sub-types, and the expression of estrogen, progesterone receptors, and HER2 in Sudanese women.

Methods: Paraffin-embedded tissue samples from patients with BC diagnosed at the Department of Pathology, Gezira University, Wad Medani, between 2016-2022. One hundred twenty-five cases were retrieved, and 94 met the inclusion criteria. Histological sections 3-5 µm thick for each patient were stained with hematoxylin & eosin to confirm the morphology and to ensure the presence of normal tissue in the vicinity of the tumor; we used the standard methods for assessing estrogen (ER) and progesterone (PR) HER₂ and Ki-67.

Result: The study examined 94 invasive breast carcinomas in patients between 28 and 75, with a mean age of 47.6 years. Almost all studied cases were invasive ductal carcinoma (95.7). The mean tumor size was 43 mm, and the majority (57%) was grade 2. The rate of ER-positive tumors was 33%, and PR-positive tumors were found in 18%. Coexpression of ER and PR was found in only 10 cases (11 %). Ki67 was more than 20% in 51% of the studied group. Molecular type frequencies were Luminal-A(12%), luminal-B(16%), Her2/neu (25%), and triple-negative(41%). (table 1). There was a significant relationship between Ki 67 (>20%) and menopause, tumor grade Tumor type, and Molecular diagnosis(P-value 0.006, 0.0001, 0.0375 and 0.0001), respectively.

Conclusion: This study detected that Ki 67 is highly prevalent in breast cancer in Sudanese women. Moreover, the hormone receptor status is similar to the incidence in central and western Africa and higher than in east Africa.

Keywords: Breast cancer, Ki-67, Molecular type of breast cancer, Sudan

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