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Estrogen and Progesterone Hormone Receptor Status in Pre-menopausal and Post-menopausal Women with Invasive Ductal Carcinoma in a Private Tertiary Hospital in Cebu City, Philippines: A Retrospective Study

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Objective: This study was conducted to determine the difference of hormone receptor status between pre-menopausal and post-menopausal women diagnosed with invasive ductal carcinoma in the local setting.

Methods: This retrospective descriptive study used data gathered from chart review of premenopausal and postmenopausal female patients diagnosed with invasive ductal carcinoma by tissue biopsy and underwent determination of hormone receptor status (estrogen and progesterone receptor) by immunohistochemical staining (ICA) using biopsy samples taken from June 2016 to December 2019 at Cebu Velez General Hospital, Cebu City. The significance of the difference in the hormone receptor status with menopausal status was analyzed using Fisher's exact test.

Results: Comparing the two groups, 25 (60%) of the pre-menopausal women and 37 (73%) of the post-menopausal women were determined as hormone sensitive, while 17 (40%) pre-menopausal women and 14 (27%) post-menopausal women were hormone resistant. The Fisher's exact test did not detect a statistically significant difference in the hormone receptor status of pre-menopausal and post-menopausal breast cancer patients.

Conclusion: There is no significant difference on the hormonal receptor status among pre-menopausal and post-menopausal women diagnosed with invasive ductal carcinoma. Thus, the need for hormone receptor status determination in these patients should be emphasized to aid in proper diagnosis, prognostication, and treatment planning.

Key words: Hormone receptor status, menopausal status, invasive ductal carcinoma, immunohistochemical staining

Introduction

Extensive studies on the etiology and pathophysiology of breast cancer have led to the development of a multimodal approach to the management of breast cancer, including surgical, chemotherapeutic, endocrine and targeted therapeutic approaches. Estrogen and progesterone receptors have been proven to play a role in breast carcinogenesis and have now become a target in preventing tumor growth and progression.

Estrogen receptor (ER) and progesterone receptor (PR) are intracellular steroid hormone receptors which have received substantial attention and have been proven to play a role in the growth of both normal breast tissue and aberrant breast tumor, expression of which has become the most important and useful predictive factors currently available for breast cancer.[1-4] Determination of ER and PR expression in tumor tissue is considered as a prerequisite for successful hormonal treatment of breast cancer. The degree of response to hormonal therapy is also significantly dependent on the presence of ER and PR in breast tumors: its efficiency is approximately 50% of ER positive tumors and 75% for tumors containing both ER and PR.[2] Thus, hormonal therapies offer many significant advantages to particular subsets of breast cancer patients and measurement of ER and PR levels in patients can select those tumors most likely to benefit from hormonal agents.[3]

It has been found that as many as 65% of breast tumors developing in women aged less than 50 years are ER positive, with figures increasing to 80% in women older than 50 years.[4] In a study by Faheem, et al., which included 1226 female Pakistani patients with breast cancer, significant association ($p < 0.05$) was found between ER and PR positivity, and Her 2 Neu over-expression with menopausal status, as well as tumor size, involvement