

PROGNOSTIC EVALUATION OF ANGIOGENESIS AND LYMPHANGIOGENESIS USING ENDOTHELIAL MARKERS IN BREAST CANCER

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ABSTRACT

Controversy exists regarding relationship between angiogenesis and lymphangiogenesis, and their usefulness as prognostic factor in breast cancer. So for a quantitative assessment of angiogenesis and lymphangiogenesis, we determined microvessel density (MVD) and lymphatic vessel density (LVD) in 40 invasive breast cancer patients, by using specific endothelial markers like CD31 and D2-40 respectively with Weidner's immunohistochemistry technique. Then statistically correlated them with each other and among other well-known poor prognostic factors like tumor size, stage, grade, axillary lymph node status, vascular invasion and hormone receptor status. We found a strong correlation between MVD and LVD ($p < .001$) and also a significant association of both MVD and LVD independently with tumor size ($p=.003$; $p=.007$), stage ($p= .021$; $p=.046$), metastatic lymph nodes ($p=.004$; $p=.041$) and lymphatic vessel invasion (LVI) seen on H&E staining ($p= .016$; $p=.022$) but not with LVI seen on D2-40($p=.016$; $p=.242$). With grade, although LVD show a significant association ($p= .028$), MVD shows insignificant association ($p= 0.136$). However no association exists with total lymph nodes yield. So with this valuable results we may conclude that angiogenesis and lymphangiogenesis are closely related and are poor prognostic factors in breast cancer.

KEYWORDS: Cancer Breast, Angiogenesis, Lymphangiogenesis