

Role of Vascular Endothelial Growth Factor Expression in Sub-typing of Breast Carcinoma

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The detection of subtypes of breast cancer based on their molecular features has brought new scope in breast cancer work. Some key regulators of angiogenesis and tumor infiltration were evaluated in breast carcinomas of basal phenotype (cytokeratin [CK] 5+). Immunohistochemical analysis with 14 primary antibodies was performed in 200 formalin-fixed, paraffin-embedded samples of invasive ductal carcinomas. CK5 correlated with indicators of poor outcome, including precocious age, high histological grade, lymph node positivity, advanced pathologic stage, negativity for hormonal receptors, and a high proliferative rate (Ki-67 labeling index). CK5 also correlated with vascular endothelial growth factor (VEGF) expression. Considering that VEGF-over-expressing neoplastic mammary cells display increased proliferative activity in vitro regardless of the angiogenic effect of VEGF, the differential expression of VEGF might contribute to the more aggressive behavior of these neoplasms. CK5 correlated with tissue inhibitor of metalloproteinase (TIMP)-1, but not matrix metalloproteinase (MMP)-1, MMP-2, extracellular matrix metalloproteinase inducer, TIMP-2, or plasminogen activator inhibitor, indicating that antiproteolytic stimuli might be preponderant in these neoplasms.

** Key words: Breast Cancer, Immuno-histochemistry.