

Predictors of disease progression in ductal carcinoma in situ of the breast and vascular patterns.

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Abstract

Breast carcinoma-induced angiogenesis helps meet growing metabolic needs of tumors and progressively increases with malignant transformation of benign ducts to ductal carcinoma in situ (DCIS) and ductal carcinoma in situ to invasive carcinoma. There are conflicting data regarding the difference in angiogenesis in low-, intermediate-, and high-grade ductal carcinoma in situ. If angiogenesis is related to ductal carcinoma in situ progression, the types of ductal carcinoma in situ with more aggressive biologic potential would have different vascular patterns than the less aggressive ones. In this study, we classified 51 cases of ductal carcinoma in situ as low (10-20 years to progression to invasive carcinoma), moderate, or high aggressive (2-5 years to progression to invasive carcinoma), based on criteria outlined by Tsikitis and Chung (*Am J Clin Oncol* 2006; 29:305), which takes into account nuclear grade, mitotic rate, Ki-67, Her2Neu, P53, estrogen, and progesterone receptor expression. We correlated these 3 groups of ductal carcinoma in situ with the extent of periductal and stromal vascularity and the presence and type of vascular breaks. No association of aggressive biologic behavior of ductal carcinoma in situ with any vascular pattern was found. Moreover, no correlation was found between vascular patterns and classifiers of aggressiveness, microvascular density, or outcome (local recurrence, invasive carcinoma, or metastatic disease). To validate our cohort, we confirmed expected correlations of all measured parameters of aggressiveness by correlating them with each other. In summary, vascular patterns in ductal carcinoma in situ do not correlate with the predictors of aggressive behavior, suggesting that the biologic potential of ductal carcinoma in situ is independent of angiogenesis.