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Survivin and glycodelin transcriptional activity in node-positive early breast cancer: mRNA expression of two key regulators of cell survival.

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Abstract

INTRODUCTION:

Glycodelin and survivin are key polypeptide regulators of cellular proliferation, apoptosis and angiogenesis. In view of contradictory reports on their functional role in tumors, we studied their transcriptional levels in localized breast cancer.

PATIENTS AND METHODS:

Glycodelin and survivin messenger ribonucleic acid (mRNA) was isolated and amplified by quantitative reverse-trancription PCR from paraffin-embedded breast carcinomas of 275 women. A normalized score was calculated by the use of GAPDH, RPL37A reference genes and was correlated with clinicopathologic/molecular parameters and patient outcome.

RESULTS:

A total of 272 patients were eligible, most harbored stage III node-positive breast carcinomas larger than 2 cm. Glycodelin mRNA was expressed in 68 patients (25%), more frequently in premenopausal women ($P = 0.01$) and those with HER2 mRNA-positive tumors ($P = 0.02$). Survivin mRNA was present in 263 tumors (97%) and its levels correlated significantly with high nuclear grade, VEGF mRNA and p53 mRNA presence ($P < 0.05$). At a median follow-up of 64 months, neither glycodelin nor survivin mRNA expression demonstrated prognostic utility for overall or disease-free survival at univariate and multivariate analysis.

CONCLUSIONS:

Glycodelin and survivin transcriptional activity are associated with adverse clinicopathologic and molecular characteristics of node-positive primary breast cancer but do not predict patient outcome. Further study is needed for illumination of their functional roles in tumorigenesis.

Comment in

- Is survivin expression nevertheless related to disease outcome in breast cancer? [Breast Cancer Res Treat. 2007]