PROGNOSTIC VALUE OF PEPSINOGEN C IN BREAST CANCER

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The objective of this study was to evaluate the prognostic value of pepsinogen C (PepC) in breast cancer patients. PepC is an aspartic proteinase involved in the digestion of proteins in the stomach and is also synthesized by a subset of human breast tumors. PepC concentration was measured with a highly sensitive enzyme-linked immunosorbent assay (detection limit 0.2 µg/L, dynamic range up to 10 µg/L, precision 4-12% and mean recovery 103 ± 2.7%). In breast tumour cytosols from 151 patients (median follow-up, 67 months) stratified according to nodal status. First, an optimal cutoff value (1.75 ng/mg of total protein of the extract) was defined by statistical analysis. PepC values were then compared with other established prognostic factors, in terms of disease-free survival (DFS) and overall survival (OS). High PepC status was found more frequently in small (P=0.003) and well-differentiated tumors (P=0.042) as well as in stage I (P=0.003) and node negative patients (P=0.040). No significant associations of PepC concentration with age and steroid receptor status were observed. In univariate analysis, negative PepC status proved to be a significant predictor of reduced disease-free (P=0.0086) and overall survival (P=0.025). Cox multivariate analysis in subgroups of patients as defined by nodal status indicated that PepC status was a strong factor to predict the DFS (P=0.0039) and the strongest factor to predict the OS (P=0.0046) in node-positive but not in node-negative patients. In conclusion, pepsinogen C may be used as an independent favorable prognostic factor in node-positive breast cancer patients since there is no significant association of PepC with other clinical prognostic factors in this group of patients.

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