Relationship between the expression of Notch1 and EZH2 and the prognosis of breast invasive ductal carcinoma

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Received August 18, 2015
Accepted December 3, 2015
Published March 18, 2016
DOI http://dx.doi.org/10.4238/gmr.15017464

ABSTRACT. We determined whether the coexpression of Notch1 and EZH2 influences the progression and prognosis of breast invasive ductal carcinoma. Using the $\chi^2$ test, a significant difference was found between high and low expression of Notch1 in terms of lymph node, hormone receptor, and p53 expression ($P < 0.05$). Moreover, a significant difference was found between high and low expression of EZH2 in terms of tumor size, histologic grade, hormone receptor, and expression of Ki67 ($P < 0.05$). Using Pearson correlation analysis, we found a significant positive correlation between Notch1 and EZH2 expression in the tissue samples of breast invasive ductal carcinoma ($P = 0.038$). High Notch1 and EZH2 expression was associated with poor progression-free survival compared with low expression ($P_{\text{Notch1}} = 0.000$, 40.3 vs 48.9 months; $P_{\text{EZH2}} = 0.000$, 40.2 vs 49.9 months). Moreover, we found that high Notch1 and EZH2 expression was associated with poor overall survival compared with low expression ($P_{\text{Notch1}} = 0.000$, 51.2 vs 56.2 months; $P_{\text{EZH2}} = 0.002$, 51.7 vs 56.4 months). In conclusion, Notch1 and EZH2 coexpression contributes to the progression and prognosis of breast invasive ductal carcinoma.

Key words: Notch1; EZH2; Invasive ductal carcinoma; Prognosis