

Comparison of e-cadherin expression in node positive and node negative invasive breast carcinomas

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Breast cancer is the commonest malignancy and the leading cause of cancer related deaths among females, mainly due to metastasis. Markers which can predict metastasis are valuable in determining prognosis and therapeutic regimes. E-cadherin is expressed in most epithelial cells. Down-regulation of E-cadherin is reported to reflect the progression and metastasis in breast cancer. This study was carried out to determine the expression of the epithelial marker 'E-cadherin' in node-positive and node-negative, primary invasive breast carcinoma- No special type (NST) and determine its predictive value of metastasis by comparing the expression levels between the two groups.

Formalin-fixed, paraffin-embedded tissue sections of 36 primary invasive breast carcinoma (NST) comprising 19 node-positive and 17 node-negative carcinomas were included. Immunohistochemical staining was done on each tumour sample and normal breast tissue of the same patient with anti-E-cadherin primary antibody. Cell membranes of epithelial cells positive for E-cadherin were stained brown. Stained sections were viewed under light microscopy (40 x10) and 08 random fields of 100 cells were assessed and positive cells were expressed as percentages.

The mean age of the group was 62±13.04years (28–86 years) while the mean ages of node negative and node positive groups were 59 years and 48 years respectively. Normal ductal cell membranes showed E-cadherin expression in 98.5% of cells. Average E-cadherin expression in node-negative group was 84.72% (63.33%-96.67%) whereas it was reduced to 69.87% (27.67%-97.33%) in the node-positive group and the difference was statistically significant (p=0.018). E-cadherin expression between normal ductal cells and the node-positive group was statistically significant (p=0.04) whereas the difference was not significant between the normal ductal cells and the node-negative group (p>0.05).

These observations are suggestive of down regulation of 'E-cadherin' expression in tumours with nodal metastasis. Metastasis being the leading cause of death due to breast cancer, identifying patients with high risk of developing metastasis is of prognostic and therapeutic value. This study demonstrates the possibility of using 'down regulation of E-cadherin expression as an indicator to predict the metastatic risk of primary breast cancer. Further studies are being carried out to evaluate its expression pattern.

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