

## E-cadherin and NM23HI as metastasis predictors for various degrees of histological malignancy in invasive ductal carcinoma

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### Abstrak

Latar belakang: Penelitian ini bertujuan untuk menganalisis apakah ekspresi protein E-cadherin dan NM23HI dapat digunakan sebagai prediktor invasi dan metastasis karsinoma duktal payudara pada berbagai derajat keganasan histologik. Metodologi: Subyek penelitian adalah 97 wanita yang telah didiagnosis menderita karsinoma payudara duktal invasif yang dikirim ke laboratorium histopatologi Rumah sakit di Jakarta dan Bandung antara tahun 2000-2006. Pemeriksaan histopatologis dengan pulasan Hematoksin Eosin terhadap blok parafin yang berasal dari tumor primer maupun sekunder dilakukan untuk penentuan derajat keganasan dan status metastasis. Selanjutnya dilakukan pemeriksaan imunohistokimia terhadap ekspresi E-cadherin, NM23HI dan sitokeratin di jaringan tersebut serta dilakukan skoring berdasarkan jumlah sel terwarnai dan intensitas pewarnaan. Analisis dilakukan untuk mengetahui hubungan ekspresi E-cadherin dan NM23HI dengan metastasis dan derajat keganasan histologik. Hasil: Subyek berusia antara 29-75 tahun dengan rerata 48,19 tahun dan terbanyak berusia 40-45 tahun, dengan derajat keganasan 1 sebanyak 18,56%, derajat 2 sebanyak 45,36% dan derajat 3 sebanyak 36,1%. Terdapat hubungan bermakna antara ekspresi E-cadherin dan NM23HI pada tumor primer dengan kemungkinan E-cadherin menghambat invasi dan metastasis sebesar 14 kali sedangkan NM23HI sebanyak 11 kali dibandingkan subyek yang tidak mengekspresikan E-cadherin dan atau NM23HI. Kurva ROC menunjukkan ekspresi E-cadherin ( $r= 0,755$ ) dan NM23HI ( $r= 0,816$ ) berkorelasi kuat, sensitif dan spesifik sebagai petanda metastasis akan tetapi tidak berhubungan dengan derajat keganasan histologik. Kesimpulan: Ekspresi E-cadherin dan NM23HI dapat digunakan sebagai petanda invasi dan metastasis, tetapi tidak dapat digunakan sebagai petanda derajat keganasan histologik karsinoma duktal invasif payudara.

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<b>Abstract</b><br>

Background: This study aims to analyze whether the expressions of E-cadherin and NM23HI can be used as predictors of ductal carcinoma metastasis in various degrees of histological malignancies. Methods: Paraffin blocks were obtained from 97 patients with invasive breast ductal carcinoma with malignancy grade 1, 2 and 3 who came to several hospitals in Jakarta and Bandung from 2000 to 2006. Histopathological examinations of eosin hematoxylin slides of primary and secondary tumors were done to diagnose the degree of histological malignancy and metastasis status. Further, immunohistochemistry staining of E-cadherin, NM23HI and cytokeratin were done followed by scoring according the number of positive cells and staining intensity. The associations of E-cadherin and NM23HI expression with the presence of metastasis and grade of histological malignancy were analyzed. Results: Subjects were 29 - 75 years old (mean: 48.19 years), with most subjects aged 40 - 45 years old, with malignancy grade 1, 2 and 3 of 18.56%; 45.36% and 36.1% respectively. There was a significant association between E-cadherin and NM23HI expression in primary tumor with the possibility of invasion and metastasis inhibition by 14 times and 11 times respectively compared to those with negative E-cadherin and NM23HI expression. The ROC curve showed that E-

cadherin ( $r=0.755$ ) and NM23HI ( $r=0.827$ ) expressions were strongly associated, sensitive and specific as metastasis markers. However, E-cadherin and NM23HI expression did not show significant association with histological degree of invasive ductal carcinoma. Conclusion: E-cadherin and NM23HI expressions can be used as invasion and metastasis markers, but cannot be used as markers for the degree of histological malignancy of invasive ductal carcinoma.