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KLINIČKO BOLNIČKI CENTAR ZEMUN

Prognostic significance expression IGF-1R in diabetic women with breast cancer

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Objective: The aim of this study was correlation expression of IGF-1R with basic histopathological and immunohistochemical breast cancer parameters and the difference between diabetic (DM2) and non-diabetic women. **Introduction:** IGF-1R together with sex hormone receptors regulates the development of epithelium of the normal glandular breast tissue and results proliferation and differentiation of the cells. IGF-1R overexpression in breast tissue can be an important link between obesity, DM2 and unfavourable caracteristics of breast cancer. **Material and Methods:** A total of 130 women with invasive breast cancer (stage I-III), preoperative DM2 had 14 (10,8%) women. Formalin-fixed paraffin-embedded tumor samples we used for immunohistochemical staining for visualization: IGF-1R, estrogen receptor (ER), progesteron receptor (PR) and human epidermal growth factor receptor (HER-2). The data were analyzed by program SPSS version 17., using two-sample t-test. The relapse-free survival (RFS) was examined using Kaplan-Meier curves, and the difference between the examined variables was assessed by the Log-Rank test. **Results:** Women with DM2 had a high tumor stage (p=0.038), number of metastatic lymph node (p=0.019), diameter (p=0.039) of breast cancer, expression ER (p=0.001) and IGF-1R (p=0,039) and high rate multifocality/multicentricity (p=0.036) of breast cancer. DM2 (p=0.023), tumor stage (p=0.039) and HER-2 (p=0.033) were independent prognostic factors for RFS. **Conclusion:** Diabetes mellitus type 2 associated with adverse outcomes because of early recurrence of breast cancer and advanced tumor and lymph node stage. DM2 can induce the higher expression and increased the binding capacity of IGF- 1R and ER and occurrence preoperative multicentric or multifocal tumor growth.

Key words: breast cancer, diabetes mellitus type 2 (DM2), Insulin-like growth factor receptor 1 (IGF-1R)

OP-5

Potencijalni prognostički značaj ekspresije miR-101 i miR-125 u karcinomu kolona

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Cilj: Ispitati potencijalni prognostički značaj odabranih miRNK u karcinomu kolona. **Uvod:** Aberantna ekspresija miRNK, kroz uticaj na ekpresiju različitih onkogena i tumor supresorskih gena može imati ulogu u nastanku i progresiji malignih tumora. Pored poznatih kliničkih i molekularnih karakteristika tumora, miRNK bi u budućnosti mogle služiti kao biomarkeri u prognozi i terapiji maligniteta. **Materijali i metode:** U ovoj prospektivnoj studiji RT-qPCR metodom analizirani su nivoi ekspresije pet odabranih miRNK (miR-29a, miR-101, miR-125b, miR-146a i miR-155) u 22 tkivna uzorka pacijenata sa indikacijama za hirurški tretman karcinoma kolona. Patohistološkom analizom nađena su i tri adenoma kolona, koji su takođe analizirani. Nivoi ekpresije korelirani su sa kliničko-patološkim karakteristikama tumora. **Rezultati:** Povišena ekspresija miR-29a, miR-125b, miR-146a i miR-155 i niža ekspresija miR-101 nađene su u tumorskom u odnosu na okolno zdravo tkivo. Nije nađena statistički značajna razlika između nivoa ekspresije ispitivanih miRNK u odnosu na: veličinu tumora, lokalizaciju (lijevi ili desni kolon), histološki gradus, količinu i sastav upalnog infiltrata, karakteristike strome

i prisustvo limfo-nodalnih metastaza. Značajno niži nivoi ekspresije miR-146a nađeni su u uzorcima sa opsežnijom nekrozom, značajno viši nivoi ekspresije miR-155 u mukus-produkujućim tumorima, a značajno viša ekspresija miR-125b u uzorcima sa limfo-vaskularnom invazijom. Interesantno, značajno viša ekspresija miR-101 i niža ekspresija miR-125b nađene su u adenomima u odnosu na uzorke tumora. Analiza ROC krivih pokazala je 100% specifičnost i 89.5% senzitivnost (AUC=0.93) za miR-101 i 100% senzitivnost i specifičnost (AUC=1) za miR-125. **Zaključak:** Preliminarni rezultati ove studije ukazuju na potencijalni prognostički značaj miR-101 i miR-125b u karcinomu kolona, što je potrebno potvrditi na većem broju uzoraka.

Ključne reči: karcinom kolona, miRNK, biomarkeri

Potential prognostic significance of miR-101 and miR-125 expression in colon cancer

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Objective: To examine the potential prognostic significance of selected miRNAs in colon cancer. **Introduction:** Aberrant miRNAs expression, through its influence on the expression of different oncogenes and tumor suppressors, may play a role in the development and progression of tumours. Apart from known clinical and molecular characteristics of tumours, in future miRNAs could serve as biomarkers in prognosis and treatment of malignancy. **Material and Methods:** Expression levels of five selected miRNAs (miR-29a, miR-101, miR-125b, miR-146a and miR-155) were analysed with RT-qPCR in 22 tissue samples of the patients with indications for surgical treatment of colon cancer. Three adenomas were found and also analysed. Expression levels were correlated with clinical-pathological characteristics of tumours. **Results:** Tumours showed increased miR-29a, miR-125b, miR-146a and miR-155 and reduced miR-101 expression levels in comparison with surrounding healthy tissue. No significant difference was found between the examined miRNAs expression levels and tumor size, localisation (left or right colon), histological grade, amount and composition of inflammatory infiltrate, stroma characteristics and the presence of lympho-nodal metastases. In cases with extensive necrosis, significantly reduced levels of miR-146a expression was found, while higher levels of expression of miR-155 was found in mucus-producing tumours and higher miR-125b expression in samples with lympho-vascular invasion. Interestingly, higher miR-101 and reduced miR-125b expression levels were found in adenomas in comparison to tumours. ROC curve analysis showed 100% specificity and 89.5% sensitivity (AUC=0.93) for miR-101 and 100% sensitivity and specificity (AUC=1) for miR-125. **Conclusion:** Preliminary results, which need to be confirmed, show the potential prognostic significance of miR-101 and miR-125b in colon cancer.

Key words: colon cancer, miRNA, biomarkers