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Functional polymorphism rs710218 in the gene coding GLUT1 protein is associated with in-stent restenosis.

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Abstract

AIM:

To analyze the association between in-stent restenosis (ISR) and polymorphisms in genes coding IGF-1, IGFBP3, ITGB3 and GLUT1, which play an important role in the smooth muscle cell proliferation and extracellular matrix synthesis - the main components of neointima.

MATERIALS & METHODS:

We analyzed 265 patients who underwent bare metal stent implantation.

RESULTS:

The differences in the occurrence of ISR between genotypes of the analyzed polymorphisms in the IGF-1, IGFBP3 and ITGB3 were not statistically significant. The T/T genotype of the rs710218 polymorphism in the GLUT1 (SLC2A1) gene was more common in the ISR group compared with non-ISR patients (81.1 vs 64.8%; p = 0.02). In a multivariable model the A/A and A/T genotype remained correlated with lower occurrence of ISR (odds ratio: 0.45; 95% CI: 0.21-0.97; p = 0.03).

CONCLUSION:

The rs710218 polymorphism in the gene coding GLUT1 protein is a novel risk factor for ISR.

KEYWORDS:

GLUT1; IGF-1; IGFBP3; ITGB3; SLC2A1; glucose transporter; growth factors; polymorphism; restenosis; stent