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The impact of APOC3 and APOE gene polymorphisms on response to statin therapy in acute myocardial infarction.

Authors:
M Teterina¹, A Geraskin¹, P Potapov², L Babaeva¹, A Pisaryuk¹, L Goreva¹, A Balatskiy², I Meray¹, Z Kobalava¹, ¹Peoples Friendship University of Russia (PFUR) - Moscow - Russian Federation, ²M.V. Lomonosov Moscow State University - Moscow - Russian Federation,

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Background and aim. Many genetic studies have been reported about the association between APOE, APOC3 gene polymorphisms and response to statin therapy in myocardial infarction, but results remain controversial. The aim of this study was to investigate the association between SNP rs7412 (APOE), rs2854117 (APOC3), rs2854116 (APOC3) and lipid-lowering effect of atorvastatin and rosuvastatin in patients with myocardial infarction.

Methods. Polymorphism of genes APOE (rs7412), APOC3 (rs2854117 and rs2854116) was determined. Lipid profile was determined on admission and after 1 year of treatment.

Results. 78 patients with myocardial infarction treated with maximal tolerated dose of atorvastatin or rosuvastatin were included. More pronounced reduction of lipid levels was associated with of T allele of rs7412 (APOE), p<0,05. ANOVA demonstrated greater low-density lipoprotein and total cholesterol decrease in patients with combination of genes C?/?T (rs7412, APOE) and CC (rs2854117, APOC3) genotypes, C?/?T (rs7412, APOE) and CT (rs2854116, APOC3 ) genotypes.

Conclusion. The genetic variants of APOC3 and APOE are useful markers and can be use to predict response to lipid-lowering therapy with statin in myocardial infarction.