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# ABSTRACTS



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## INFLAMMATORY RESPONSE AND OXIDATIVE STRESS GENES POLIMORFISMS ARE ASSOCIATED WITH ATHEROSCLEROTIC STATUS

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Atherosclerosis is characterized by the inflammation and scarring of arterial walls, with oxidative stress as a primary contributing factor. Inflammatory response and oxidative stress genes polymorphisms could affect atherosclerosis development. Current study is aimed to investigate the association of *PONI* (rs662), *EDNI* (rs5370), *SERPINE1* (rs587776796), *PPARGCIA* (Gly482Ser) and *TNF* (-308G-A) single nucleotide polymorphisms (SNPs) with atherosclerotic status and detect possible gene-gene interactions. The study involved 95 people older than 55 years divided into 3 age- and sex-matched groups according to the atherosclerotic status. The SNPs were detected by allele-specific real-time polymerase chain reaction method using commercial kits. The genotype and allele frequency between patients with atherosclerosis and the controls were equally distributed for *PONI*, *EDNI*, *PPARGC1*, and *TNF* genes polymorphisms. The results suggested that *SERPINE1* mutant allele is associated with increased risk of atherosclerosis development (OR=2.60; 95%CI: 0.92–7.30). The multifactor dimensionality reduction (MDR) analysis had indicated a three-marker model and one-marker model of gene interaction affecting the atherosclerotic status. The *SERPINE1* gene polymorphism (rs587776796) has a pathogenic effect for atherosclerosis development and can be used for identification of atherosclerosis risk. The combination of the *PONI* (rs662), *SERPINE1* (rs587776796) and *PPARGCIA* (Gly482Ser) genes found to be the possible interaction model for predictive atherosclerotic status identification. This research supported by the grant of the Russian Science Foundation №. 15-15-10022. Measurements performed on the equipment of the Center for collective use "High technology" of Southern Federal University (Rostov-on-Don, Russia).