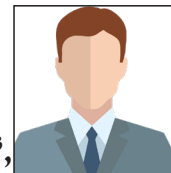


## The effect of viral neuraminidases on the initiation, course and outcome of cardiovascular disease



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### Abstract

**Aims:** Recently some progress has been made in the study of lipoprotein modification. It was found that desialylation of low-density lipoproteins (LDL) and their receptors by endogenous sialidases affects the lipoprotein metabolism in atherosclerosis. However, a study of the influenza virus sialidases activity in blood plasma will allow us to see in a new light the contribution of exogenous sialidases to the onset and development of atherosclerosis. In addition, the determination of the exogenous sialidase activity association with conventional cardiovascular risk factors is necessary for disease prediction.

**Methods:** We collected and analyzed 350 plasma samples, including 192 plasma samples from patients with coronary heart disease (CHD) (38% with a history of myocardial infarction (MI)) and 158 samples from healthy subjects. The Sample group consisted of 49% men, 44% women and 7%, whose gender information was not available. The average age of the subjects was 63.6, SD=12.2. Sialidase activity was measured by radiologic assay and fluorometric assay kit. Real-time qPCR was used to measure the transcript levels of the influenza virus neuraminidase gene with degenerated primers.

**Results:** We determined sialidase activity in plasma samples from subjects, and that average value was 6.4  $\mu$ U/ml with SD=1.6 (from 2.5 to 13.5  $\mu$ U/ml). Enzyme activity was detected in 344 out of 350 samples. Amplification of the influenza virus neuraminidase gene was detected in 50% of the samples. The data obtained were not related to the level of LDL and HDL cholesterol and triglycerides of plasma samples, age and gender of subjects, their health status and clinical aspects of CHD and MI.

**Conclusion:** Sialidase activity was shown in patient samples, that was independent of conventional cardiovascular risk factors, as well as the clinical aspects of diseases. Viral sialidase is believed to contribute to the pathogenesis of atherosclerosis.

### Biography

Alexander M. Markin has completed his PhD at the age of 28 years from «Volgograd State Medical University», Russian Federation. He is the researcher of Research Institute Of Human Morphology, Russian Federation. He has 5 publications and his publication H-index is 1.

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