

Abstract

Desialylation of Blood Plasma Lipoproteins by Exogenous Sialidase [†]

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Abstract: Objective: Sialidases can play an important role in atherosclerosis development due to modification of low-density lipoproteins (LDL). It is known that desialylated LDLs are associated with atherosclerosis development. However, the information about factors leading to desialylation of LDL needs clarifying. The creation of an appropriate model object could help to understand factors related to desialylation of LDL. The aim of this study was to test the possibility to change sialylation of lipoproteins in healthy mice upon an injection of immobilized sialidase. Methods: The control group of C57BL6 mice ($n = 48$) was treated by a single injection of saline, while the experimental group ($n = 48$) received *Vibrio cholerae* sialidase conjugated with mouse IgG. Mice were terminated at fixed periods: before and after a single injection (one to seven days). LDL was isolated from serum by ultracentrifugation. The content of sialic acid was determined according to Warren’s method. Lipids of serum were measured by commercial kits. Results: A significant decrease in LDL sialic acid by 30% was detected up to five days after the sialidase injection. Additionally, serum levels of triglycerides, total cholesterol, and HDL-cholesterol in experimental mice did not differ compared with wild-type control mice. Conclusions: A new approach to study the role of sialidase as a proatherogenic factor in vivo was established.

Keywords: sialidase; lipoproteins; LDL; sialic acid; sialylation

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