

Abstract

Charles University in Prague

Faculty of Pharmacy in Hradec Králové

Department of Biological and Medical Sciences

The effect of nicotinic acid on the expression of endoglin in atherosclerotic lesions
brachiocephalic artery

Diploma thesis

Pavλίna Skýpalová

Supervisor: doc. PharmDr. Petr Nachtigal, Ph.D.

Background: The aim of this study was to set methods for the detection of endoglin in atherosclerotic lesions brachiocephalic artery. In addition we wanted to evaluate possible effect of nicotinic acid treatment on endoglin expression.

Methods: In this study were used ApoE/LDLR double knockout mice with pre-established atherosclerosis. At the age of 16-18 weeks mice were weight-matched between two groups with six members and fed modified AIN-93G-based diets with low carbohydrate and high protein for eight weeks. The second group was fed the same diet with added 1% of nicotinic acid for four weeks. Biochemical analysis of blood samples was performed to identify cholesterol levels. Detection and quantification of endoglin expression was realized by immunohistochemical and stereological methods.

Results: Nicotinic acid did not affect cholesterol levels when compared with control mice. The expression of endoglin was detected only vascular endothelium predominantly covering atherosclerotic lesions in both groups. Immunohistochemical and stereological analysis revealed no effect of nicotinic acid treatment on endoglin expression.

Conclusions: The results presented here in this diploma thesis showed no effect of nicotinic acid on the process of atherosclerosis in this experimental design suggesting that change of experimental design seems to be necessary to see whether this drug can affect inflammation and lesion progression in this experimental model.