Abstract

Charles University in Prague, Faculty of Pharmacy in Hradec Králové

Department of Biological and Medical Sciences

Kateřina Klimešová

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

Title of diploma thesis: Immunohistochemical detection of eNOS in atherosclerotic lesions brachiocephalic artery

Background: We observed the expression of endothelial NO synthase (eNOS) in brachiocephalic artery in apoE/ $LDLR^{-/-}$ deficient mice fed by low carbohydrate high protein diet.

Methods: We used apoliporotein E and LDL- receptor deficient female mice that are prone to atherosclerosis. Mice were divided in two groups, 6 mice in each group. First group (control) was fed by western-type diet; second group was fed by low carbohydrate high protein diet (LCHP). We made total cholesterol level measurement. The expression of eNOS was detected by imunohistochemical and stereological methods.

Results: Biochemical analysis showed significantly increased total cholesterol level in LCHP group comparing to control group. eNOS expression was detected by imunohistochemical analysis in endothelium covering atherosclerotic plagues as well as in intact endothelium in both groups. Stereological analysis has detected no significant increase of eNOS expression in LCHP group comparing to control group.

Conclusion: Increased total cholesterol level was observed in mice on LCHP diet. There was no significant increase of eNOS expression comparing to control group. Nevertheless this diploma thesis showed that immunohistochemistry might be used for the quantification of eNOS expression in brachiocephalic artery.