Abstract

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The endoglin expression during atherogenesis

Diploma thesis

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Background:

The aim of this diploma thesis is to analyze the endoglin expression in mice aorta and try to describe differences in the expression between animals with various levels of cholesterol and with different stage of the development of atherosclerosis.

Methods:

Female C57BL/6J mice and female apoE/LDLr deficient mice, ages 8 and 16 weeks were used in the study. Biochemical analysis of blood samples and immunohistochemical analysis, of aorta were performed. For identification of endoglin expression was used Avidin-Biotin (ABC) method with DAB visualization.

Results:

Biochemical analysis revealed significantly increased levels of cholesterol in 8 and 16 weeks hypercholesterolemic groups compared to 16 weeks C57BL/6J mice. There were also significantly increased levels of cholesterol in cholesterol-fed 16 weeks apoE/LDLr deficient mice compared with 8 weeks group fed with chow diet. Immunohistochemical analysis demonstrated very intensive expression of endoglin on the endothelium in aorta in aortic sinus, in all groups of mice. The expression was the most intensive in animal group with the highest cholesterol and with the largest atherosclerotic plaques. Expression of endoglin outside aortic sinus was very low and if ever it was detected on the surface of plaque only.

Conclusion:

This work demonstrates some differences in localization of endoglin expression in relation to cholesterol levels and atherosclerosis plaques presence.