Abstract

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Title of Thesis: Early changes in tissue endoglin and VCAM-1 expression in mice aorta after administration of high fat diet

Background: The aim of the thesis was to observe changes in tissue endoglin and VCAM-1 expression in mice aorta after administration of chow and high-fat diet using immunohistochemical methods. Finally, these two groups were compared.

Method: Two-month-old female C57BL/6J mice were used for the experiment. First half, which served as a control group, was fed with the chow diet. The second half was fed with the high fat diet, which contains 1.25 % of cholesterol and 40 % of fat, for the period of 3 months. Immunohistochemical analysis was performed using the indirect three-step avidin-biotin complex method.

Results: The expression of endoglin was detected on the vascular endothelium but there were no evident differences in the staining intensity between the control group and the experimental group. We also observed VCAM-1 expression in the vascular endothelium. In the control group, expression appeared to be stronger than the experimental group, however these differences were not that significant.

Conclusions: Administration of high fat diet with 1,25 % of cholesterol and 40 % of fat for 3 months had no effect on the expression of endoglin and VCAM-1 in mice aorta.
The mouse model fed by this diet at this particular time has no significant effect on the development of endothelial dysfunction from a morphological point of view.

**Keywords:** endoglin, VCAM-1, endothelium, immunohistochemistry