

Abstract

Charles University

Faculty of Pharmacy in Hradec Kralove

Department of Biological and Medical Sciences

Consultant: Associate Professor, Petr Nachtigal, Ph.D.

Candidate: Tereza Stehlíková

Title of Thesis: Early changes in eNOS and ICAM-1 expression in mice aorta after administration of high fat diet

Background: The aim of this thesis was to observe changes in eNOS a ICAM-1 expression after administration of high fat diet in comparison with the control group, which was fed with the chow diet.

Method: C57BL/6J female mice were used for the experiment. 6 mice were fed with the high fat diet (experimental group), which contains 1,25 % of cholesterol and 40 % of fat, for the period of 3 months. Six mice (representing control group) were fed with the chow diet the whole time. Immunohistochemical analysis was performed by means of avidin-biotin complex method.

Results: The expression of eNOS was visible on the vascular endothelium but there were no differences between the control group and the experimental group. Similarly, ICAM-1 expression was detected only in endothelium in aorta but no differences in the expression between control and experimental group were visible.

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 eNOS and ICAM-1 in mice aorta. Results of this thesis indicate that using these mice and this experimental design do not lead to the manifestation of the endothelial dysfunction from the perspective of morphological findings.

Key words: eNOS, ICAM-1, endothelium, immunohistochemistry