Abstract

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Study of the expression of some markers of endothelial function in mice with high levels of soluble endoglin.

Diploma thesis

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Background: The aim of this diploma thesis was to describe changes of expression eNOS and ICAM-1 in the wall of aorta of mice with low and high levels of soluble form of endoglin (*Sol-Eng+).* The attempt was to compare expression of both markers from the position of intensity and also from the position of area of staining. For this purpose we used immunohistochemical methods with detection in fluorescent microscope.

Methods: For this study were used transgenic mice with high levels of human soluble endoglin (*Sol-Eng+).* Female mice were fed from their six months of age with high fat diet, which contained 1.25% of cholesterol and 40% of fat. The mice were fed with this diet for another three months. The same old female mice from the same brood with low level of soluble endoglin in plasma were used as a control group. The expression of eNOS and ICAM-1 was defined on sections of aorta of the mice with fluorescent immunohistochemistry.

Results: Immunohistochemical analysis proved weak expression of eNOS in both groups of mice, and only on vascular endothelium. The expression of ICAM-1 was very similar in both groups of mice and it was proved only on vascular endothelium. The expression of ICAM-1 was stronger, more regular and it occupied bigger area of vascular endothelium in comparison with expression of the eNOS.

Conclusion: The expression of eNOS and ICAM-1 was observed in both groups of mice only on vascular endothelium. The expression of these molecules is different in the expression of ICAM-1 and eNOS, the expression of ICAM-1 was stronger. No significant differences in the intensity or localization of the expression of both molecules were observed between Sol-Eng+ group and the group of control mice. These results did not prove induction of endothelial dysfunction at the mice with high levels of soluble endoglin from the point of view of expression eNOS and ICAM-1.