Abstract

Charles University in Prague

Faculty of Pharmacy in Hradec Králové

Department of Biological and Medical Sciences

Immunohistochemical detection of PECAM-1, endoglin and VCAM-1 in aorta of transgenic mice with high levels of soluble endoglin

Rigorous thesis

Mgr. Monika Brlicová

Consultant of rigorous thesis: PharmDr. Jana Rathouská, Ph.D.

Background: We observed an effect of high level of human soluble endoglin (sEng) on an expression of tissue endoglin and adhesion molecules VCAM-1 and PECAM-1 in descendent aortas of experimental animals.

Methods: 6 months old female transgenic mice of strain CBAxC5B7BL/6J with high plasma levels of human soluble endoglin (Sol-Eng^{+}) and the same types of mice, which show signs of low plasma levels of human soluble endoglin as control mice were used for this rigorous thesis. Both groups were fed by high fat diet for 3 months. After that the levels of total cholesterol in the blood of these animals were biochemically determined and then statistically evaluated. The immunohistochemical method ImmPRESS^{TM} was used for detection of protein expression in aortic sections.

Results: Biochemical analysis showed a statistically insignificant difference in total cholesterol levels in both groups. Immunohistochemical analysis ImmPRESS^{TM} showed no differences in the expression of adhesion molecules (PECAM-1, VCAM-1) and endoglin in study group of mice compared with control group.

Conclusions: High levels of soluble endoglin have probably no effect on expression of PECAM-1, VCAM-1 and endoglin molecules in descendent aorta of transgenic model of mice. Verification and possible confirmation of this result will require an application of other detection methods.