

Abstract

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Markers of inflammation and proliferation in the heart of a transgenic mouse model expressing high levels of soluble endoglin

Rigorous thesis

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Background: The aim of this thesis was to investigate the expression of markers of inflammation and proliferation in the cardiac wall of genetically modified mice expressing high levels of soluble endoglin. It was shown that soluble endoglin molecule plays a role in many cardiovascular diseases. The transgenic mouse model with high levels of soluble endoglin allows us to study its contribution to the pathogenesis of these diseases.

Methods: For this work a transgenic mouse model on CBAxC57BL/6J background with high levels of human soluble endoglin was used. We observed the expression of selected molecules (ICAM-1, VEGF, COX-2 and SOD-3) in the heart wall of this group of mice compared to the control group of mice with low levels of human soluble endoglin. Both groups of animals were fed a chow diet till the age of nine months. Western blot analysis was used to detect the protein expression. ELISA analysis was used to allocate the mice in two relevant groups.

Results: The results of Western blot analysis of cardiac tissue showed no significant differences in the expressions of specific markers of inflammation and proliferation in the observed group of mice compared with the control group of mice.

Conclusion: The results suggest that the high level of soluble endoglin is unlikely to have influence on expression of molecules of inflammation and proliferation - ICAM-1, VEGF, COX-2 and SOD-3 - in the cardiac wall of a transgenic mouse model fed chow diet. Confirmation of this hypothesis will be the subject of further studies.