

Influence of MDOCTM Administration on Atherogenic Process in the Experimental Model of Atherosclerosis.

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In this study we investigated prospective hypolipidemic and anti-inflammatory effects of modified oxidized cellulose (MDOC). In the therapy of hyperlipidemia and blood vessel complications (atherosclerosis) there are used the most considerable substances – statins, today. However, it was also documented, that feed dietary roughage has positive influence on cardiovascular system, inclusive of cholesterol level. MDOC (polyanhydroglucuronic acid), because of it's properties can be classified probably as the soluble fibre.

We used apoE deficient mice as the model of atherosclerosis, fed by atherogenic diet. We analyzed levels of total cholesterol and other lipoprotein fractions and serum concentrations of inflammatory markers (IL-6 and VCAM-1) in blood. Total cholesterol concentrations were assessed enzymatically by conventional diagnostic methods and spectrophotometric analyses. For the detection of VCAM-1 expression in aortic sinus and part of aortic arch we used immunohistochemical methods and for quantification of VCAM-1 expression we used stereological methods.

Biochemical analyses results showed that MDOC administration did not affect levels of total cholesterol, VLDL cholesterol, and triacylglycerols. However we noted statistically significant decrease of LDL cholesterol levels and increase of HDL cholesterol levels. Moreover we demonstrated significant decrease in proinflammatory IL-6 levels in blood. On the other hand

These results suggest potential hypolipidemic (LDL decrease and HDL increase) and anti-inflammatory (IL-6 level decrease) effects of MDOC in the apoE-deficient model of atherosclerosis. Further studies are needed to explore the mechanism of MDOC effects, it's influence on atherogenic process, the size and composition of atherosclerotic plaques and the prospective combination with another hypolipidemic agent.