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MEETING ABSTRACT

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Effects of resveratrol supplementation in rats with diet-induced hypercholesterolemia

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Background: *Trans*-resveratrol (RSV) is a phytoalexin, class: stilbene, polyphenol compound from the non-flavonoids group, for which numerous *in vitro* and pre-clinical tests on animals have shown the ability to exhibit a wide range of potentially useful activities for human health, such as antioxidant, anti-inflammatory, cardioprotective, neuroprotective, anti-diabetic, and anti-cancer activity. There are several commercially available dietary supplements in Serbia, based on resveratrol, which are recommended to reduce the risk of cardiovascular, neurodegenerative and malignant diseases. However, like other available dietary supplements, they have not been sufficiently tested in terms of their quality and safety. Few previous studies on animals have showed that resveratrol has the ability to express cardioprotective effects via various mechanisms of action. The aim of this study was to examine the effect of a commercial supplement based on resveratrol on the lipid status of experimental animals in order to assess the hypolipidemic effect of the registered preparation.

Methods: Three groups containing 6 animals of male Wistar rats (250–300 g) were used for the study. Group I served as control and received only vehicle (saline) for 30 days. Group II was fed with a high-cholesterol diet (2% cholesterol and 0.5% cholic acid of a daily diet was dissolved in olive oil and given orally by probe) for 30 days. Group III was fed with a high-cholesterol diet and treated with the resveratrol-based dietary supplement (20 mg RSV/kg body weight) orally for 30 days.

Results: Cholesterol and cholic acid diet induced a significant increase in total cholesterol, triglyceride and serum LDL concentration in comparison to the control group ($p < 0.05$), while HDL levels has remained unchanged. Treatment with resveratrol-based dietary supplement (Group III) significantly decreased serum LDL and triglyceride levels, while it significantly increased the HDL levels in comparison to Group II.

Discussion: The present results show that a resveratrol-based dietary supplement possesses significant hypolipidemic effect in laboratory animals with cholesterol/cholic acid diet-induced hyperlipoproteinemia which may explain protective effect of resveratrol against atherosclerosis and cardiovascular diseases.

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