

Preventive potential of *Nigella sativa* L. on atherosclerosis with efficacy on lipid profile and fatty streak accumulation in diet-induced hypercholesterolemia in rabbits

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Background and Aims: Coronary heart disease is a global health problem. Medicinal plant dietary supplements lead to favorable efficiency on cardiovascular diseases. This study was carried out to determine the effects of *Nigella sativa* (NS) on lipid profile [total cholesterol (TC), triacylglycerol (TG), low-density lipoprotein (LDL) and high-density lipoprotein (HDL)], C-reactive protein (CRP), oxidized LDL (ox-LDL), antioxidant capacity, apolipoproteins (apo A, apo B) and fatty streak formation (FSF) in hypercholesterolemic male rabbits.

Methods: 15 male rabbits were randomly distributed into three groups of five each [normal diet, hypercholesterolemic diet (1% cholesterol) and hypercholesterolemic diet (1% cholesterol) supplemented with 5% NS]. They received rabbit laboratory chow diet for a period of 8 weeks. At the start and end of the study, fasting blood were taken to measure biochemical factors from all animals.

Results: Dietary supplementation with NS, significantly decreased FSF as well as TC and LDL in hypercholesterolemic rabbits ($p < 0.05$). Using NS had positive effects on other factors (TG, HDL, CRP, ox-LDL, antioxidant capacity, Apo A and Apo B), although these were insignificant.

Conclusions: Based on favorable efficiency of NS on lipid profile and its anti-atherogenic cardioprotective properties, it is suggested using this medicinal plant with fat-rich diets simultaneously may reduce their adverse health effects.

Keywords: Fatty streak; Hypercholesterolemia; *Nigella sativa* L; Rabbit