Innovation in Food for Optimal Nutrition

Cardioprotective effect of a meat with omega-3 and rosemary antioxidant in low cardiovascular risk people.

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Introduction: to design and research functional foods that may have a beneficial effect on the public health is a current topic of great interest in food and nutrition science.

Objectives: to evaluate the cardioprotective properties of consumption of a functional meat enriched with rosemary extract and omega-3 fatty acids on different cardiovascular risk parameters in dyslipidemic population without drug treatment.

Method/Design: In a randomized, cross-over, double-blind, placebo-controlled study, 43 dyslipidemic subjects without drug treatment, received 3 servings/week (serving=150 g) of a functional meat (FM) (turkey or ham slices) enriched with rosemary extract (0.03%) and omega-3 (0.9%) or control meat (CM). Each volunteer received the 2 product in random order (FM/CM or CM/FM) during 12-weeks intervention periods with 4-weeks washout period. A balanced diet was recommended during the study. Dietetic, anthropometric, and biochemical data, and different cardiovascular risk scores (Framingham, LDL/HDL, Col/HDL) were collected and calculated at baseline and at the end of each intervention period.

Results: Nor statistical differences were found in energy intake during FM and CM intervention. Framingham risk score (-0.2287±0.13 vs. 0.1644±0.13, p<0.05) and the inflammatory indicator parameter PAI-1(-0.22±0.13 vs. 0.33±0.13 ng/mL, p<0.01) was significantly lower in FM. There were no changes in blood lipid profile parameters. However, FM subjects with initial risk HDL values (□≤40 mg/dL ♂, □50 mg/dL ♀) increased the HDL-Cholesterol (1.55±1.28 mg/dL vs. -0.41±1.29 mg/dL), and decreased the LDH/HDL ratio (-0.090±0.15 vs. 0.17±0.15) at the end of the intervention, while in the CM group the difference no were significant. Finally, the antioxidant capacity in blood was significantly higher in FM comparing with CM (1.78±1.25 vs. -2.68±1.27, p<0.05).

Conclusions: FM consumption within the context of a balanced diet may have an anti-inflammatory, antioxidant and cardioprotective effect, especially in population with low/moderate cardiovascular risk.

Key Words: functional food, omega-3, rosemary antioxidant, functional meat, cardiovascular disease.