

ICCN Poster Presentations

Nutrition and cardiovascular disease

Ageing, cardiovascular risk profile and vegetarian nutrition

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With the aim of identifying subjects with increased risk for cardiovascular diseases, population based lipid screening projects (Lipid Study Leipzig, LSL) were initiated in the city of Leipzig, Germany. Age-dependent changes in lipid metabolism may arise as a result of mechanisms of biological ageing and as a result of factors influencing age-dependent changes. To study the possible influence of nutrition and lifestyle of vegetarians on age-dependence of lipid parameters, in the frame of LSL, 10550 subjects (3816 men and 6734 women) from the general population were compared with 419 vegetarians (160 men and 259 women). LSL was performed at community centres, work sites, at the University of Leipzig, and at meetings of the German Society of Vegetarians. The study included capillary blood cholesterol measurements and the determination of HDL-cholesterol. Furthermore, measurement of other cardiovascular risk factors and the evaluation of dietary and lifestyle factors was included in the study. The mean cholesterol and non-HDL-cholesterol concentration and the total: HDL-cholesterol ratio showed the expected age-dependence, with maximum values within the decade 60-70 years followed by a decrease in the higher age groups. Vegetarians showed lower mean total and non-HDL-cholesterol levels in comparison with the general population. Furthermore, the age-dependence of these parameters is less pronounced under the conditions of vegetarian nutrition and lifestyle. The results of the present study reveal the primary role of nutritional and lifestyle factors on population basis and that determine the lipid profile on population basis and suggest that the known age-dependent rise of atherogenic plasma lipoproteins is partly preventable.

Impact of sesame oil on nifedipine in modulating oxidative stress and electrolytes in hypertensive patients

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The aim of the study was to investigate the effect of sesame oil as sole edible oil in hypertensive patients who were on medication with nifedipine, a calcium channel blocker. A sample of 396 hypertensive patients (aged 58 ± 3.8 years; 215 men and 181 women) participated in this study. Forty patients were treated only with nifedipine while three hundred and fifty six patients were treated with nifedipine and instructed to use sesame oil in place of other edible oils for 60 days. The consumption of sesame oil remarkably reduced the (systolic and diastolic blood pressure from 166 ± 4.2 and 101 ± 3.1 to 134.2 ± 3.4 and 84.6 ± 3.0 respectively) blood pressure. The dosage of the drug also reduced, as there was a fall in blood pressure during sesame oil consumption. Plasma levels of sodium decreased while potassium and chloride increased significantly. Lipid peroxidation (thiobarbituric acid reactive substances) level significantly decreased while activities of enzymic (superoxide dismutase, glutathione peroxidase and catalase) and concentrations of non-enzymic antioxidants (vitamin C, vitamin E, β -carotene and reduced glutathione) increased in nifedipine – sesame oil group. Nifedipine group showed a significant reduction in blood pressure, lipid peroxidation and improvement in reduced glutathione, however, the values are significantly lower than nifedipine - sesame oil group. These results suggest that dietary substitution of sesame oil, in nifedipine-taking hypertensive patients, has an additive effect in the reduction of blood pressure and plays an important role in the modulation of electrolytes and in the reduction of lipid peroxidation and elevation of antioxidants.