ICCN Poster Presentations

Nutrition and cardiovascular disease

Study of leek (Allium porrum. L) extract on cholesterol plasma levels in hyperlipidemic animals

A Movahedian*, A Ghannadi, H Sadeghi, M Gharavi, S Azarpajhoh
Dept. of Clinical Biochemistry, School of Pharmacy, Isfahan University of Med. Sci., Isfahan,Iran

Atherosclerosis is a disease affecting large and medium-sized arteries and remains the leading cause of mortality and morbidity in developing countries. It is now well documented that there is a causal relationship between increased serum lipid levels and the development of atherosclerotic disease. The major aim of the present study was to investigate the effect of hydroalcoholic extract of Allium porrum. L. (A herbaceous plant from Liliaceae family that have been used in Iranian traditional medicine as an antiatherogenic remedy) on plasma lipid levels. Rabbits were divided into 5 groups as follows: control, hypercholesterolemic control and 3 treatment groups (hypercholesterolemic diet +250, 500, 1000 mg/kg.b.w of extract) and were fed for 12 weeks. Blood samples were obtained to analyze plasma cholesterol, triglyceride, LDL and HDL cholesterol and atherogenic index (A.I.). Body weight increased in all groups throughout the treatment without significant differences among them. Plasma total cholesterol increased with respect to the control in the positive control group at the end of the treatment. Plasma total cholesterol decreased in all groups treated with *A. porrum* extract in a dose dependent fashion. Changes in the distribution of cholesterol in HDL or LDL were found and LDL-C decreased significantly in all of the groups treated with *A.* porrum extract with respect to hypercholesterolemic group. All treated animals also showed a decrease in A.I. Further research is necessary to evaluate the activity of the minor constituents and the mechanisms of these effects. However, these findings indicate that this plant may be useful for the treatment of hyperlipidemia.

Estimation of risk for developing cardiac problem in patients of Type2 Diabetes as obtained by the technique of density estimation

Ajit Mukherjee*, Ajit Mathur, Rakesh Mittal and NC Saxena
Division of Reproductive Health and Nutrition, Indian Council of Medical Research, Ansari Nagar,
Post Box 4911, New Delhi-110029, India

In a hospital-based study conducted by Indian Council of Medical Research in 1989-92, 4637 patients of Type2 Diabetes (Non-Insulin Dependent Diabetes Mellitus) were enrolled. Various biochemical investigations and electrocardiogram (ECG) were carried out on the patients at regular intervals. The 311 patients showing ECG positive, formed the first group. The remaining patients numbering 4326 formed the second group. The observations on cholesterol and triglyceride of the patients in both the groups were considered for estimation of risk for developing the cardiac problem. The technique of density estimation employing Epanechnikov kernel, was employed for estimating bivariate probability density functions with respect to observations on cholesterol and triglyceride of the patients falling in the two groups thus formed. Using the odds form of Bayes' rule, the estimates of posterior odds were computed. It was demonstrated that if the value of cholesterol was fixed at 250 and triglyceride was increased from 209 to 254 and then to 260, the posterior odds of developing a cardiac problem increased from 0.0629 to 0.08047 and then to 0.08459. In other words, keeping cholesterol fixed at 250 and increasing triglyceride by a margin of 45 and 51 units from 209, led to respectively1.28 and 1.34 times increase in odds for developing a cardiac problem.