ICCN Poster Presentations

Nutrition and cardiovascular disease

Food and nutrient intake in relation to cardiovascular disease among rural males of Punjab, India

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A nutritional study was carried out on one hundred rural males in the age group of 40-60 years hospitalised with first cardiac attack to determine the relationship of food and nutrient intake with the cardiovascular disease (CVD). 37% of the subjects were overweight and 7% were obese on the basis of body mass index. The mean waist/hip (W/H) ratio was 0.8 and was normal. 22% were having hyperglycaemia and 32% were hypertensive with average random blood glucose (RBG) levels and systolic blood pressure (BP) values of 205.7mg/dl and 160.4mm, respectively. The average serum values of cholesterol, LDL-C, HDL-C and triglycerides were 180.5, 106.4, 47.4 and 156.7 mg/dl, respectively. 6% subjects suffered from hypercholesterolemia and 28% subjects had borderline high values of cholesterol. The mean daily intake of cereals, pulses, green leafy vegetables, root and tubers, other vegetables, fruits, milk and milk products, meat and poultry, fats and oils and sugars was 332.0, 40.5, 34.4, 93.7, 193.6, 107.3, 573.2, 15.5, 27.9 and 24.7 g, respectively. Cereals were significantly ($p \leq 0.1$) but negatively correlated with BMI and systolic BP. Pulses and legumes had a significant ($p<0.05$ and 0.1) but negative correlation with serum cholesterol and triglycerides. Fruit and vegetable consumption was negatively correlated ($p<0.05$) with serum triglycerides. A significant correlation was also observed between milk consumption and serum triglycerides ($p<0.01$), LDL-C ($p<0.05$), triglycerides and blood glucose levels ($p<0.1$). The average daily intake of energy, niacin and iron was inadequate while protein, vitamin A, thiamine, riboflavin, folacin, ascorbic acid, calcium, phosphorus and magnesium intake was adequate. The average daily intake of total and visible fat was 71.4 and 27.9 g, respectively. Polyunsaturated fats to saturated fats ratio was 0.15 and much lower than the ideal ratio of 1.0. Average daily cholesterol intake was 131.2mg. A highly significant ($p<0.01$) correlation was observed between saturated fat intake and serum cholesterol. A significant ($p<0.05$) relation was also found between saturated fats and LDL-C and serum triglycerides. The percent contribution of fats to total daily energy was 32.5%, which was undesirable. Hence, it was concluded that modification in diet can reduce the incidence of CVD among rural male population of Punjab.

The effect of adhesion to recommendations for fish intake on adipose tissue composition and plasma lipids

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Background: Marine n-3 polyunsaturated fatty acids (PUFA) reduce the mortality in patients with coronary heart disease (CHD), and these patients are recommended to eat fatty fish at least 2 times a week.

Patients and methods: Patients referred for coronary angiography due to suspected CHD were included and (n=288) completed a food questionnaire regarding their fish intake. Those who followed the recommendations were classified as belonging to the Fish+ group (n=197), while those, who consumed fish less than twice a week, were in the Fish- group (n=91). Plasma lipids and lipoproteins and the content of marine n-3 PUFA in adipose tissue, a long-term marker of fish consumption, were then compared between the 2 groups. The content of n-3 PUFA in adipose tissue was measured by gas chromatography and expressed as percent of total fatty acids.

Results: In the Fish+ group the content of the marine n-3 PUFA, eicosapentaenoic acid (EPA) was 0.14 % (0.05) and docosahexaenoic acid (DHA) was 0.39 % (0.16) compared to the Fish- group, where the content of EPA was 0.11 % (0.04) and of DHA 0.28 % (0.11) in adipose tissue ($p= <0.001$ for both). Plasma lipids and lipoproteins did not differ between the 2 groups.

Conclusion: Patients who followed the general recommendations about fish intake (Fish+ group) did have at higher incorporation of EPA and DHA in adipose tissue, compared to patients who consumed little fish (Fish- group). However, plasma lipids and lipoproteins did not significantly differ between the groups.