ICCN Poster Presentations

Nutrition and cardiovascular disease

Blood lipid and glucose levels of adolescents belonging to upper income group as markers for assessing the risk of CAD/DM

SJ Passi*[1], SC Manchanda[2], R Lakshmi[2], K Paintal[1] and P Kapur[1]

[1]*Department of Foods and Nutrition, Institute of Home Economics (University of Delhi) F-4, Hauz Khas Enclave, New Delhi-110016,* [2]*All India Institute of Medical Sciences, Ansari Nagar, New Delhi-110029.*

Inadequate nutrition, unhealthy dietary habits and poor lifestyle practices during childhood are the prime factors that predispose an individual, in adult life, to various degenerative diseases such as CHD, hypertension, Diabetes Mellitus and obesity. Thus, timely implementation of preventive strategies is crucial for improving the dietary patterns and lifestyle practices of our '*would be adults*'.

Objectives: To study the dietary habits and physical activity pattern; and to assess the nutrient intake, blood pressure, anthropometric parameters as well as the blood lipid and Glucose levels of school going adolescents belonging to well to families.

Methodology: School going adolescents - both boys and girls (N=773), aged between 13 and 18 years, were enrolled from public schools of South Delhi. Data were gathered on dietary habits, food preferences, physical activity pattern and anthropometric measurements. One day 24 hour recall coupled with the food frequency approach was employed to obtain dietary intake data. Overnight fasting blood samples (5ml) were analysed for serum lipids (TC, LDL, VLDL, HDL and TG) and blood glucose levels. Dietary data have been analysed, both for the macro and micronutrient intake; and a scoring pattern has been developed to assess the physical activity level of the subjects.

Results: The data revealed that majority of the subjects had faulty dietary habits. The consumption of fruits and raw vegetables (salads) was in general low; while fried/processed foods and desserts consumption was quite frequent. The diets of majority of the adolescents were low in dietary fibre, vitamins and minerals. Most of the adolescents spent their free time in sedentary activities like watching TV, reading and playing videogames and participation in outdoor activities/competitive sports was fairly low. The mean Physical Activity Score (PAS) was 1.46, ranging from 1.30–1.79. Mean BMI of the subjects was 20.9 kg/m^2, the prevalence of overweight/ obesity being 14.9% and underweight 30.6%. The mean total cholesterol was 157.9mg/dl, LDLc-89.8mg/dl, VLDLc-17.1 mg/dl, HDLc-50.6mg/dl, triglycerides - 85.2mg/dl and fasting blood glucose-82.2 mg/dl. Nearly 8.5% of the subjects were hypercholesterolemic/borderline cases (TC>200mg/dl), 8.3% hypertriglyceridemic (TG>130 mg/dl) and 8.1% hyperglycemics (fasting blood glucose >100mg/dl). 30% exhibited SBP >120 mmHg while 16.7% had DBP >80 mmHg. The study focuses on the relationship of dietary errors and lifestyle practices with the blood lipid levels and hence the CAD risk.

Conclusion: In view of a sizeable number of the adolescents exhibiting dietary errors, poor lifestyle practices coupled with hypercholesterolemia, hypertriglyceridemia and hypertension; early screening and timely implementation of effective educational interventions leading to necessary dietary/lifestyle modifications and attitudinal change is imperative. This would help in preventing various chronic diseases, which are becoming a concerned cause of morbidity and mortality amongst our youth, particularly those from the elite group.