

Concentrations of cholesterol and cholesterol precursors of Indonesian patients with hypercholesterolemia and normal subjects: A preliminary study

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Statement of the Problem: Metabolic diseases has been increasing also in many developing countries due to change of life style including diet. Regarding the food-intake which also has been greatly changed in developing countries moving to developed-countries food-intake; animal protein and dairy food are now contribute a great proportion to their daily food. The aim of the study was to measure the cholesterol concentrations, dietary intake and concentrations of cholesterol precursors.

Methods: A cross-sectional study had been done to forty subjects who were recruited voluntarily from non-teaching and teaching staff of the medical faculty. Inclusion criteria for 20 subjects with hypercholesterolemia are total cholesterol level ≥ 240 mg/dL, and/or LDL-cholesterol level > 160 mg/dL. Other laboratory results within normal limits. Twenty other subjects were normal. Semi quantitative food frequency questionnaire (SQ FFQ) and 24-hour recall method were used for assesment of recent calories and fat intake. Subjects' anthropometric features were also measured. Precursors of sterols were measured with GC-MS in accordance to established method.

Results: Forty subjects (male = 28, female = 12) gave their consent, but at the end of the study only 34 were eligible, with mean of age 39.52 ± 10.5 y.o, BMI 25.14 (min.=18.5, max.=41.9), percentage of body fat 25.53 ± 11.5 . Mean concentration of total cholesterol were 236.80 mg/dL ± 45.77 (min.=111, max.=347), LDL-C 126.40 mg/dL ± 30.4 , HDL-C 41.6 mg/dL ± 11.48 , and TG 173.23 mg/dL ± 173.2 . Precursos cholesterol: Lathosterol 0.37 ± 0.13 vs 0.270 ± 0.10 ($p = 0.023$); Campestanol 8.0 ± 0.13 vs 6.0 ± 0.05 ($p = 0.033$); Sitostanol 9.5 ± 0.11 vs 7.56 ± 0.014 ($p = 0.026$) between hypercholesterolemic and normal subjects, respectively. In terms of diet, hypercholesterolemic subjects eat more animal protein, green vegetables than normal subjects, but eat less fruit, plant protein and fortified products (3.43 vs 2.83 ; 3.30 vs 3.00 ; 1.00 vs 1.07 ; 2.03 vs 2.30 , and 1.60 vs 1.27 , respectively)

Conclusions: It shows hypercholesterolemic subjects were differents not only on their cholesterol levels but also cholesterol precursors and eat more animal protein than normal subjects

Biography

Dr Abraham Simatupang is a Senior Lecturer and currently is the Head of the Department of Pharmacology & Therapy, Faculty of Medicine, in Universitas Kristen Indonesia. His research interest lies in cholesterol and lipid- lowering drugs.

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