Nutritional aspects of hypertension In the Indonesian elderly (a community study in 6 big cities)

Sudijanto Kamso, author

Abstrak

<i>Cardiovascular disease has become the first cause of death. Highest morbidity is found in the age, and among cardiovascular diseases, prevalence of hypertension is the highest. Many studies on the relationship between nutritional factors and hypertension have been done, but studies to observe determinants of hypertension in Indonesia are lacking. Therefore, there is an urgent need to elaborate information on various hypertension risk factors in the Indonesian elderly, which will allow the policy makers to provide appropriate intervention programs.

The primary purpose of this study was to investigate various determinants of hypertension in the Indonesian elderly with different nutritional status.

A cross sectional study was undertaken in Jakarta and 5 other cities with total sample of 1261 elderly using multistage random sampling. Subjects were recruited from elderly population in Jakarta, Padang, Bandung, Jogyakarta, Denpasar and Makasar. Data were collected through interview using structured questionnaires, anthropometrics measurements, biochemical blood and urine analysis, and blood pressure measurements. Daily nutrients intake was analyzed using WorldFood2 Dietary Assessment Program. Data were analyzed by using SPSS programs for Windows version 7.5; General Linear Model, Multiple linear regression and logistic regression analysis were performed to determine the predictive power of independent variables for outcome variables. Prevalence of hypertension found in the study was quite high, more than 50% of the study population for both men and women. This study showed significant differences of determinant and predictive factors of blood pressure between elderly with Body Mass Index (BMI) < 25 kg/m2 and BMI? 25 kg/m2. Prevalence of systolic and diastolic hypertension was higher in the elderly with BMI < 25 kg/lm2 than in the elderly with BMI 25 kg/m2. BMI was a significant determinant for diastolic blood pressure in elderly with BMI > 25 kg/m2. There was a positive association between blood pressure and Waist to hip ratio (WHR) irrespective of BMI value.

Plasma LDL cholesterol >160 mg/dl increased the risk of having systolic hypertension 1.5 to 2 times in the elderly with BMI < 25 kg/m2 after the age of 65 years and increased the risk of having diastolic hypertension 1.5 times. Plasma triglycerides > 200 mg/dl increased the risk of having systolic hypertension 1.7 and 2.5 times in elderly with BMI 25 kg/m2 and in elderly with BMI? 25 kg/m2 respectively, after the age of 65 years and increased the risk of having diastolic hypertension Ft, 1.7 times. Ratio of total cholesterol to HDL cholesterol > 5 increased the risk of having hypertension 1.8 times in elderly with BMI? 25 kg/m2. Plasma HDL cholesterol < 35 mg/dl in elderly with BMI < 25 kg/m2 increased the risk of hypertension approximately 2.4 times. In elderly with BMI < 25 kgmm2, monounsaturated fatty acid (MUFA) had negative correlation (protecting effect) with diastolic and systolic blood pressure. Saturated

fatty acid (SFA) had positive correlation with diastolic blood pressure and systolic blood pressure. Cholesterol intake had positive correlation with diastolic blood pressure. Multivariate analyses in this study did not find significant correlation between energy intakes with blood pressure. Although no significant correlation was found between protein intakes with blood pressure, this study showed that arginine intake had protecting effect against hypertension. The study also showed that calcium and potassium intake had negative correlation with DBP and SBP respectively in elderly with BMI > 25 kg/m2. In elderly with BMI < 25 kg/m2 sodium intake had positive correlation with SBP. This study also demonstrated that sport index had negative correlation (protecting effect) with diastolic blood pressure.

Nutrition education to elderly group should emphasize healthy nutrients with protecting effect against hypertension and avoid nutrients with positive correlation to hypertension. Suggestion for sodium restriction especially in the elderly with BMI < 25 kg/m2, and proper physical/sport activity as a protecting factor against hypertension is very important for the elderly. Regular check of blood pressure and plasma lipid should be conducted and Public Health Centers equipped with appropriate laboratory facilities, for early detection of hypertensive risk factors. BMI category should be considered in hypertension program since there were differences of determinant factors of hypertension between different categories of BMI. Future studies should be directed on public health and nutrition intervention to the elderly community.</i>