

ICCN Poster Presentations

Nutrition and cardiovascular disease

The health status of hypertensive patients in Hospital Teluk Intan, Perak, Malaysia

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Hypertension is one of the risk factors of cardiovascular diseases and is a major determinant for the incidence of stroke, coronary heart diseases and renal failure. The prevalence of hypertension in Peninsular Malaysia has shown a marked increase from 14.4% to 24.0% as reported by the 2nd National Health and Morbidity Survey, 1996. Twenty percent of the total certified deaths due to cardiovascular diseases were recorded in 1996 and it increased up to 20.33% in 1998. The objective of this study was to determine the health status of hypertensive patients in Hospital Teluk Intan, Perak. Data were collected using an interviewer-administered questionnaire which assessed the socio-demographic status, medication compliance and lifestyle practices. Dietary intake was assessed through Food Frequency Questionnaire. Data were analysed using SPSS Version 10.0. Current information on height, weight and blood pressure were recorded. One hundred subjects, 48 males and 52 females, with a majority of them between the ages of 45 and 64, participated in the study. Most of the subjects had only primary level of education (49%) with a mean income of RM 704.08 ± 539.95. Results indicated that the mean systolic and diastolic blood pressure of the subjects were 141 ± 16.53mm Hg and 87 ± 8.10 mm Hg respectively. Approximately 57% of the subjects were overweight with a mean Body Mass Index of 26.2 ± 4.4 kg/m². The majority of subjects were non-smokers (79%) and led sedentary lifestyles. Oil, salt and sugar were food items consumed highly and regularly. In terms of lifestyle and dietary modifications, only 30% of the subjects claimed to have reduced salt intake and 10% have stopped smoking. Compliance with medication regimen was 100% through self-reporting but only 62% of the subjects had their blood pressure under control. There was no relationship seen between the level of education with medication regimen compliance among subjects. In conclusion, the health status among hypertensive patients in Hospital Teluk Intan was moderate and needed modifications on dietary intake and lifestyle practices to prevent undesired complications. The findings from this study should be taken into attention in future hypertension studies and interventions programmes.

Simvastatin not low-cholesterol diet lowers the elevated plasma nitric oxide level in hyperlipidemic patients

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Introduction: Simvastatin is beneficial for preventing cardiovascular diseases through its modulation of nitric oxide production in addition to its lipid-lowering effects. It is not known whether statins inhibit NO production or down-regulate the iNOS expression in human. It is not clear from experiments to date whether it is possible to predict the final changes of plasma NO concentration of hypercholesterolemic patients after low-cholesterol diet and statin therapy. This is because the statin therapy leads to the activation of eNOS activity of the endothelium while it leads to suppression of iNOS expression in the leukocytes infiltrating the atherosclerotic lesions. We investigated the effects of simvastatin therapy and lipid-lowering diets on plasma NO concentration as well as on plasma lipid profile and coronary risk factors in hyperlipidemic patients.

Method: We measured the plasma level of nitrite and nitrate (NOx), and lipid profiles in nineteen hyperlipidemic patients controlled with low-cholesterol diet and following simvastatin therapy for 12 weeks, respectively.

Result: Plasma level of NOx, stable metabolites of nitric oxide (NO), was elevated by 2-fold in hyperlipidemic patients. Although 12 weeks of low-cholesterol diet did not lower NOx level, subsequent 12-week of simvastatin (10mg/day) therapy along with the therapeutic diets, lowered NOx level significantly. This lowered level of NOx induced by simvastatin therapy was positively correlated with the lower coronary risk factor ($r=0.40$, $p=0.02$).

Discussion: Simvastatin therapy appears to down-regulate, selectively, the iNOS expression which produces large amounts of NO that contribute to overall plasma NOx concentration while increase the eNOS activity and expression which may not contribute plasma NOx level in hyperlipidemic patients. Simvastatin therapy decreases plasma NOx level by, perhaps, decreasing iNOS expression or activity leading attenuation of development of neointima.