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PACHARA PANPUNUAN : EFFECT OF MUSHROOM *GANODERMA LUCIDUM* EXTRACT TREATMENT IN HYPERCHOLESTEROLEMIC PATIENTS. THESIS ADVISORS : VICHAI TANPIAICHITR, M.D.,Ph.D., RATANA PAKPEANKITVATANA, D.Sc., PREEYA LEELAHAGUL, D.Sc. 186 P. ISBN 974-662-288-9

The purpose of this study is to investigate the effects of mushroom *Ganoderma Lucidum* extract treatment on blood pressure, plasma lipid levels, fasting blood glucose (FBG) and 2-hr postprandial blood glucose levels (PBG) levels, platelet aggregation and plasma fibrinogen levels in 11 hypercholesterolemic patients attending the Nutrition Clinic, Department of Medicine, Ramathibodi Hospital. The patients were 2 men and 9 women, aged 31-69 yrs, who had plasma total cholesterol (TC) of  $\geq 5.17$  and low density lipoprotein-cholesterol (LDL-C) of  $> 3.36$  mmol/L. Each patient participated in a 60 - week study which consisted of 8 wks (wks -8 to wk 0) of dietary advice only, 12 wks (wks 0-12) of low dosage (1,400 mg/d; 350 mg/tablet, Government Pharmaceutical Organization, Bangkok) of *Ganoderma Lucidum* extract plus dietary advice, 24 wks (wks 12-36) of high dosage (4,200 mg/d) of *Ganoderma Lucidum* extract plus dietary advice and 16 wks (wks 36-52) of 80 g/d of GEN-FORMULA<sup>®</sup> (Thai Otsuka Pharmaceutical Co. Ltd; Bangkok), a nutritionally complete enteral formula.

The results show that the mushroom *Ganoderma Lucidum* extract treatment had no effect on patients' blood pressure. However, there were significantly positive relationships between waist-over-hip circumference ratios (WHR) ( $r=0.411$ ,  $p<0.0001$ ) or waist circumferences ( $r=0.192$ ,  $p<0.05$ ) and diastolic blood pressure. Both body mass index (BMI) and WHR had significantly positive influences on patients' diastolic blood pressure ( $R=0.240$ ,  $p<0.01$ ).

Regarding cholesterol-lowering effect of *Ganoderma Lucidum* extract, 3 patients (P.Ro, L. Th, and S.Si) responded to the low dosage only, 1 (W.Ki) responded to the low dosage better than the high dosage, and 2 (S.Ja and P. Th) responded to the high dosage only. The responses were based on the decreases of  $\geq 5\%$  of plasma low density lipoprotein-cholesterol levels at wk 12 from those at wk 0 as well as plasma LDL-C levels at wk 36 from those at wk 12.

The *Ganoderma Lucidum* extract treatment had no effect on patients' mean FBG, PBG, and plasma fibrinogen levels. Patients' mean percentages of maximal platelet aggregation induced by 5  $\mu$ M of ADP or 3  $\mu$ M of epinephrine during wks 8-44 were lower than during wks -8 and 0. However, the differences reached statistical significance only for patients' mean percentages of maximal platelet aggregation induced by 5  $\mu$ M of ADP at wks 8 and 16 as compared to those at wk -8. These findings indicate the platelet aggregation inhibition of the mushroom *Ganoderma Lucidum* extract. No clinical and laboratory adverse effects were observed during the study.