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SAVANEE CHAVEESUK : EFFECT OF MUSHROOM *GANODERMA LUCIDUM* EXTRACT TREATMENT IN PATIENTS WITH NON-INSULIN-DEPENDENT DIABETES MELLITUS. THESIS ADVISORS : VICHAI TANPHAICHITR, M.D.,Ph.D., PREEYA LEELAHAGUL, D.Sc., RATANA PAKPEANKITVATANA, D.Sc. 226 P. ISBN 974-662-286-2

The purpose of this study is to investigate the efficacy and safety of mushroom *Ganoderma lucidum* extract treatment in 6 patients with non-insulin-dependent diabetes mellitus (NIDDM). Six patients, consisting of 4 men and 2 women, aged 45-70 yrs, participated in the study. Their initial fasting blood glucose (FBG) levels ranged from 6.55 to 9.27 mmol/L. Three of them were treated with glibenecamide by maintaining the dosages throughout the study. The remaining 3 patients received dietary management. Each patient participated in a 48-wk study which consisted of 8-wks of dietary advice, 12-wks of low dosage (1,400 mg/d) of mushroom *Ganoderma lucidum* extract (Government Pharmaceutical Organization, Bangkok), 12-wks of high dosage (4,200 mg/d) of mushroom *Ganoderma lucidum* extract and 16-wks of 80 g/d of GEN-FORMULA® (Thai Otsuka Pharmaceutical Co. Ltd), which is a nutritionally complete enteral with cholesterol lowering effect.

The results show that FBG levels in 2 patients with NIDDM treated with glibenecamide decreased during the *Ganoderma lucidum* extract treatment without striking changes in patients' body mass index (BMI) and waist circumferences. Thus the mushroom *Ganoderma lucidum* extract had low hypoglycemic activity. Whether it will be definitely useful to control blood glucose levels when it is used together with glibenecamide or not, needs further investigation.

All 6 patients exhibited intermittent decreases in their plasma low density lipoprotein-cholesterol (LDL-C) levels while receiving the mushroom *Ganoderma lucidum* extract treatment, but levels were generally lower than those at wk 8. The net decreases of ≥ 5% of patients' plasma LDL-C levels while receiving the mushroom *Ganoderma lucidum* extract treatment from those at wk 8 indicate its effectives in lowering plasma LDL-C levels. The net decreases in plasma LDL-C levels in S.Am at wks 12, 16, and 32 were 12.0, 14.4, and 26.4%, respectively; in P.Su at wks 16 and 20 were 7.7 and 19.0%; in S.Ch at wks 12, 16, 20, and 32 were 13.1, 21.6, 10.7, and 12.0%, respectively; in W. No at wk 12 was 7.7%; in N.Le at wk 20 was 15.1% and M.Ar at wks 12, 28, and 32 were 24.5, 8.8 and 14.6%, respectively. Thus it can be concluded that the mushroom *Ganoderma lucidum* extract had mild cholesterol-lowering effect in patients with NIDDM treated with glibenecamide or dietary advice.

This study has also revealed that the mushroom *Ganoderma lucidum* extract treatment had no effects on lowering blood pressure or plasma fibrinogen levels, nor were there any inhibiting effect on platelet aggregation. No clinical and laboratory adverse effects were observed during the study.