

3736306 RANU/M : MAJOR : NUTRITION ; M.Sc. (NUTRITION)  
KEY WORD : ACARBOSE, BODY WEIGHT, DIABETES, BLOOD  
GLUCOSE

WATJANA LORPRAYOON : EFFECT OF ALPHA-GLUCOSIDASE  
INHIBITOR (GLUCOBAY®) ON BODY WEIGHT AND BIOCHEMICAL  
PROFILE OF THE OBESE TYPE 2 DIABETIC PATIENTS. THESIS ADVISORS:  
SURAT KOMINDR, M.D., ORAVAN PUCHAIWATANANON, D.Sc., WINAI  
DAHLAN, Ph.D., SUPUJCHARA NOPCHINDA, D.Sc., 187 P. ISBN 974-663-687-  
1

Obesity and diabetes mellitus are an important risk factors for atherosclerosis. Weight reduction in type 2 diabetic patients is associated with improved glycemic control and reduced cardiovascular risk. Alpha-glucosidase inhibitor delays the intestinal digestion of polysaccharides and the rise of blood glucose. The aims of this study was to assess the impact of Glucobay®, an alpha-glucosidase inhibitor, on body weight, glycemic control, serum lipid levels and certain vitamin and mineral levels including routine safety parameters in obese NIDDM patients.

The study lasted 32 wks and was divided into three phases consisted of an 8 week diet-only phase, followed by 16 weeks of treatment with diet plus medication and 8 weeks after withdrawal of medication. In diet-only phase, 32 obese NIDDM patients were instructed to maintain 1,000 kcal/day diet containing 50% carbohydrate, 30% fat and 20% protein. Then the patients were divided into two groups by randomization to receive either Glucobay® 200 mg or placebo three times a day.

With diet-only, there was no significant improvement in the body weight, fasting plasma glucose (FPG), HbA1c and lipid levels, only postprandial plasma glucose (PPG) that was significantly decreased from baseline ( $267 \pm 70$  vs  $222 \pm 88$  mg/dL,  $p < 0.05$ ).

After adding medications, the Glucobay® group lost 2.7 kg (3.6% of body weight), which differed significantly from 0.5 kg (0.8% of body weight) weight gain on the placebo group ( $p < 0.01$ ). All the glycemic indicators in Glucobay® group were decreased from the start of medication (FPG:  $176 \pm 47$  vs  $158 \pm 51$  mg/dL,  $p < 0.05$  ; PPG:  $203 \pm 69$  vs  $165 \pm 61$  mg/dL ; HbA1c:  $9.0 \pm 1.4$  vs  $8.2 \pm 1.2\%$ ,  $p < 0.01$ ) which increased significantly after withdrawal of medication, whereas in the placebo group, these parameters were not significantly changed. The changes after medication of FPG, HbA1c and PPG elevation between both groups were all significantly different at  $p < 0.05$ ,  $< 0.05$  and  $< 0.01$ , respectively. Fasting serum total cholesterol, triglycerides and postprandial serum triglycerides were not significantly changed in both groups. In addition, concentrations of vitamins and minerals including hematologic, biochemical, or liver function test results assessed from blood remained unchanged in patients treated with Glucobay®. The most common side effects were flatulence and diarrhea, which were mostly mild to moderate in severity and subsided over time. Therefore, Glucobay® 200 mg three times daily is an efficient and safe drug for weight reduction in addition to its use in the glycemic control.