Thesis Title The Study of Efficacy and Safety of Glucomannan in Weight Reduction in Overweight Subjects

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Abstract

The objective of this study was to evaluate the efficacy and safety of glucomannan (GM) obtained from the tubers of *Amorphophallus konjac* in weight reduction in overweight subjects. This study was designed as a randomized, double-blind, placebo-controlled trial. The whole study period lasted for 18 wk, with the diet run-in period of 6 wk and the trial period of 12 wk. The subjects were recruited based on the criteria of having body mass index (BMI) $\geq$ 24 kg/m^2 or body weight $\geq$ 110% ideal body weight (IBW). Seventy-eight subjects, ages 17-50 years old, completed the 6 wk diet run-in period. During the last 12 wk (wk 6-wk 18), they were randomized to receive either GM or placebo capsules. The subjects took two 600 mg capsules of GM or lactose with at least 250 ml water, 1 hr prior to each meal three times a day.

The results showed that during the diet run-in period, the subjects began to lose weight significantly at wk 2 ($p < 0.05$) and continued to lose more in the following visits ($p < 0.01$). Mean weight change of the whole group was 0.6±0.2 kg.

In the trial period, the overall results did not clearly show the effectiveness of GM in weight reduction. However, the weight reduction of the subjects in the GM-treated group seemed to be greater than those of the placebo group (0.8±0.4 kg *vs* 0.5±0.3 kg).

There were no clinically significant differences in the serum lipid profiles between subjects in the placebo and GM-treated groups. The side effects due to GM such as flatulence and constipation were mild and did not require any treatment.

To determine the effect of GM on hunger and satiety, a randomized, crossover trial was conducted in twelve healthy subjects. All of them received either GM at the dose of 3.6 g or placebo (6 identical empty gelatin capsules) 1 hr before meal. In general, satiety ratings seemed to be better and mean hunger ratings tended to be less in the GM-treated group than those in the placebo group although statistical differences were not demonstrated. The results thus indicated that GM might promote satiety and reduce hunger.

In this study daily intake of 3.6 g GM in obese/overweight subjects for 12 wk did not produce appreciable weight loss. However, this does not necessarily rule out the possibility that GM may be useful for the treatment of obesity. Methodological problems in the clinical trials of weight control may be responsible for the failure to demonstrate GM efficacy in this study. Further studies should be conducted by recruiting a group of subjects with a higher initial average weight and and a shorter diet run-in period.