EFFECTS OF NATIVE BANANA RESISTANT STARCH ON BODY WEIGHT AND INSULIN RESISTANCE IN OBSE TYPE 2 DIABETICS

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Abstract: The epidemic of obesity-associated insulin resistance and type 2 diabetes (DM 2) is a major burden in modern societies. DM 2 stems from the failure of the body to respond normally to insulin, called “insulin resistance” coupled with the inability to produce enough insulin to overcome this insulin resistance. Obesity is often present at the beginning of DM 2 and a great percentage of the patients remain with overweight during longer periods. Some clinical studies have shown that interventions that alter diet and physical activity to achieve weight loss can prevent the development of DM 2. Moreover, dietary fiber intakes are linked to improved metabolic control of this disease. Resistant starch supplementation from different sources has demonstrated beneficial effects on reducing body weight and improving glycemic control. We hypothesized that intake of banana resistant starch (BRS) may reduce body weight and improve metabolic control in obese type 2 diabetics. A randomized, single-blind, placebo controlled, cross-over study was performed. Thirty obese type 2 diabetic patients were randomly divided in two groups of fifteen each one. One group received banana resistant starch 24 g/d mixed in soy milk 240 ml and the other one soy milk 240 ml (control) over a time period of 4-wk. Then, the first group received soy milk (control) and the second one banana resistant starch during the same period. Clinical interview and laboratory assays were performed at the beginning and every month. Paired t Student was used to compare differences between BRS and control group. Improved insulin sensitivity assessed by a reduction on HOMA values indexes, was higher after BRS treatment than after placebo (7.862 to 5.332 and 6.903 to 5.096, respectively, p =0.010). Body weight reduction was higher after BRS treatment than after control (1,568 g vs 325 g, respectively, p =0.008). Glycemia, HbA1c, lipids and lipoproteins were not modified after BRS treatment. BRS supplementation improved insulin sensitivity and reduced body weight but did not have effects on blood lipids and glycemia. Longer studies on insulin-resistant subjects including non-diabetics obese people are recommended.

Key words: Diabetes, banana, resistant starch, obesity, insulin resistance, body weight.

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