EFFECTS OF ACUTE INGESTION OF NATIVE BANANA STARCH ON GLYCEMIC PROFILES BY CONTINUOUS GLUCOSE MONITORING IN OBESE AND LEAN SUBJECTS

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Abstract: Previous studies in obese subjects have shown the beneficial effects of native banana starch (NBS) chronic supplementation on glycemic and insulin response measured by fasting glycemia, fasting insulin, HOMA-IR and OGTT. Recent studies, however, have shown that the continuous glucose monitoring (CGM) has the advantage to detect intraday glycemic excursions. A deranged glycemic profile including postprandial glycemia and acute glucose spikes precedes onset of overt diabetes in obese subjects. Our aim was to examine the effects of an acute ingestion of NBS on glycemic profiles by CGM in obese and lean subjects. A randomized, crossover, single blind controlled trial with periods of 5 days and washout of 7 days was conducted. Twenty young subjects (10 obese and 10 normal weight subjects) under a low-fiber diet consumed two milkshakes containing either 38 g of native banana starch or 38 g of digestible starch (DS) daily during 5 days. CMGS was installed at second day and changes along the time were registered. At 5\(^{th}\) day, a 3-h meal tolerance test (MTT) was performed to evaluate glucose and insulin responses at 0, 30, 60, 90, 120,150 and 180 min. NBS supplementation reduced the 48-h glycemia area under curve (AUC) in obese subjects (p =0.012) in comparison with DS. No effect of NBS on glycemic variability in obese or lean subjects was observed. Postprandial insulin response at MTT was reduced after NBS in comparison with DS in obese and lean subjects (p 0.039). HOMA-IR index at MTT did not change after NBS supplementation. In conclusion, previous NBS acute supplementation improved postprandial glucose and insulin responses in obese and lean subjects. Further research to elucidate the mechanism behind these changes is required.

Keywords: Obesity, banana starch, metabolic control, insulin sensitivity.

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