Abstract

Background: Nutritional and food intake assessments before and after bariatric surgery may be important to correct eating habits and nutritional deficiencies. Aim: To assess the efficiency of the 24-hour food recall (24hR) form as a fast method for assessing nutrient intake before and after a Roux-en-Y gastric bypass (RYGB). Methods: This study analyzed data from 10 obese patients with type 2 diabetes mellitus (T2DM). Food intake (calories, macronutrients, and micronutrients) before and 3 months after RYGB were assessed with the 24hR as well as the seven-day food record (7dR) as the gold standard reference. Virtual Nutri Plus® software was used to quantify nutrients. Results: The 7dR data revealed deficits in the estimated intake of total fiber and 14 out of 22 micronutrients pre- and postoperatively, combined; the 24hR failed to detect intake deficits in only two of these micronutrients (vitamins A and B3). Other postoperative deficits included carbohydrates, vitamin B1, copper, and iron, on which the 24hR was sensitive to only the iron deficit. In our pre- versus post-operative comparison analyses, the 7dR revealed decreases in total calories, carbohydrates, total and all subclasses of fat and fiber, and 12 micronutrients; in the analogous comparison analyses, the 24hR failed to detect decreases in the ingestion of monounsaturated and saturated fats and in six of these micronutrients. Conclusions: In obese T2DM patients, the 24hR performed reasonably well for probing nutrient intake before and after RYGB, but is not recommended for tracking changes over time, including pre- versus post-operative deficits.

Keywords

4-hour food recall, 7-day food record, Virtual Nutri Plus®, Roux-en-Y gastric bypass.