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ORIGINAL ARTICLE

Roux-en-y gastric bypass reduces body parameters but does not alter diet quality during six months follow-up

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Abstract

Backgroung: the diet quality contributes for the success of weight loss treatment after bariatric surgery.

Objective: to evaluate weight loss, body parameters and diet quality during the short-term (6 months) follow-up of subjects undergoing Roux-en-Y Gastric Bypass (RYGB).

Methods: prospective and observational study, carried out with adult patients, of both sexes, submitted to RYGB. Weight, BMI, percentage of total weight loss (%TWL), waist circumference (WC), fat mass (FM), fat-free mass (FFM) and diet quality were evaluated before (T0), and approximately in the second (T1) and sixth month (T2) after RYGB. Diet quality was assessed by the Healthy Eating Index. Data were analyzed by repeated measures ANOVA or Friedman's test, with 5% significance level.

Results: the final sample consisted of 18 patients, (89% female). %TWL was 16.2% at T1 and 26.7% at T2. There was a significant reduction in weight, BMI, WC, FM, FFM ($p<0.001$), in total daily calorie intake ($p=0.017$), and in total fat consumption ($p=0.009$) over the course of the evaluated moments. The diet was classified as low quality, mainly due to the low intake of cereals, roots, tubers, fruits, vegetables, legumes, meat, eggs, milk and derivatives, not differing between the evaluated moments ($p>0.05$).

Conclusion: in the present study, despite adequate weight loss and reduction of body parameters, subjects submitted to RYGB showed a low diet quality during the follow-up, indicating the maintenance of inadequate eating habits.

Keywords: obesity, bariatric surgery, gastric bypass, body composition, diet, healthy.

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Authors summary

Why was this study done?
Despite bariatric surgery, specifically Roux-en-Y Gastric Bypass (RYGB), promote weight loss, it can lead to an inadequate intake of foods from different groups, as well as several nutrients, compromising the nutritional status in short-term. Therefore, evaluation of diet quality of subjects submitted to RYGB can help in the success of the treatment of severe obesity.

What did the researchers do and find?
In this study, it was evaluated percentage total weight loss (%TWL), body parameters (body mass index, fat-mass, fat-free mass, waist circumference) and diet quality during six months follow-up of patients undergoing RYGB. Diet quality was evaluated by Health Eating Index. It was observed an adequate %TWL, a significant reduction of body parameters, but a poor diet quality during the three time-points evaluated. The diet was characterized by low consumption of fruits, vegetables, and food sources of complex carbohydrates and proteins.

What do these findings mean?
Despite %TWL, the poor diet quality indicates the maintenance of inadequate eating habits during the short-term follow-up, and the Health Eating Index could be useful for predicting possible nutritional deficiencies and for early nutritional intervention in patients undergoing RYGB.

Highlights
Roux-en-Y Gastric Bypass promoted adequate percentage of total weight loss and reduced body parameters, although a poor diet quality persisted during six months of follow-up.
The low score in diet quality was related to low intake of several food groups, including those sources of complex carbohydrates and proteins, and indicates the maintenance of inadequate eating habits during the short-term follow-up.
The Health Eating Index could be useful for predicting possible nutritional deficiencies and for early nutritional intervention in bariatric patients.

INTRODUCTION

Bariatric surgery (BS) is a procedure indicated for the treatment of severe obesity, when patients do not respond to conventional treatment, which involves changes in lifestyle and drug therapy[1]. By reducing gastric and absorptive capacity, presenting a low risk of complications and being effective in reducing excess weight, Roux-en-Y Gastric Bypass (RYGB) is a technique considered the gold standard[2], corresponding to the main BS performed in Brazil[3]. The weight loss induced by BS can be divided into phases, in which the first six months after surgery, the short-term, is characterized by a marked weight loss[4]. The weight loss has generally reported as percentage of initial weight loss (%TWL)[5]. %TWL is a desirable method because its accuracy, and it is less influenced by confounding anthropometric factors, such as initial BMI[5,6].

However, the treatment of severe obesity does not depend exclusively on the surgical procedure. Diet is a key factor, and its quality can compromise the success of the treatment[7]. In the early weeks of the postoperative period, patients submitted to BS present changes in food intake, such as the ingestion of a liquid diet in small volumes, which can hinder an adequate intake of calories and nutrients, as well as food from the different groups[7,8]. It is very common to observe after BS, the development of food intolerances and/or aversions, which may increase the risk for the appearance of nutritional deficiencies[9]. In general, at this stage, the diet is characterized by a low variety of foods, insufficient consumption of proteins and micronutrients[10,11].

One study showed that the dietary intake of vitamin C, B12, zinc and iron, of 42 individuals submitted to RYGB reduced significantly ($p<0.05$) in the first month after surgery, remaining low until the 6th month after bariatric surgery. Concomitantly, plasma levels of hemoglobin, vitamin B12 and ferritin decreased significantly ($p<0.05$) during this period[12]. Another study also found an inadequate consumption of several vitamins and minerals in short-term after BS[13]. Although the studies carried out a quantitative assessment of ingested nutrients, a qualitative analysis of the food consumption of the different groups, which would allow a complementary assessment of the diet of these individuals, has not been carried out.

The quality of a diet can be evaluated by several methodologies[14]. The Healthy Eating Index (HEI) allows the analysis of compliance with the intake of food groups, yielding a total and separated components score that reveal a pattern of dietary intake. HEI can be applied to evaluation of individuals and groups, being able to support dietary interventions[15], although studies that evaluate the diet quality by HEI during follow-up of RYGB patients are scarcely described. Thus, this study aimed to evaluate weight loss, body parameters and diet quality during the short-term (6 months) follow-up of subjects undergoing RYGB.

MATERIAL AND METHODS

Study design and participants

This is an observational and prospective study, carried out with patients submitted to RYGB of the Bariatric and Metabolic Surgery Program of a University Hospital, Espírito Santo, Brazil. Participation was voluntary, and the invitation was given between February and June 2019. The convenience sample was formed according to inclusion and exclusion criteria. Patients age from 18 to 60 years, BMI >40 kg/m² or >35 kg/m² with the presence of comorbidities were invited to participate. The subjects who failed to provide at least one 24-hour food recall (R24H) at the assessed times, pregnant women and patients using pacemakers and any other metallic structures were excluded, following the recommendations of the European Society for Clinical Nutrition and Metabolism (ESPEN)[16]. Thus, 27 patients met the eligibility criteria and agreed to participate in the study, but nine individuals were excluded due to the absence of at least one R24H. Then, the final

sample was composed by 18 RYGB patients.

Subjects were evaluated in three moments: approximately one month before the surgery (T0) and about the second (T1), and sixth month after it (T2). The study was approved by the Hospital Research Ethics Committee (#59075722.7.0000.5071). All procedures were conducted in accordance with the World Medical Association Code of Ethics (Declaration of Helsinki). Participants were informed about the objectives and methodology of the study, and signed the Free and Informed Consent Form.

Anthropometric parameters

Body weight was measured using an anthropometric scale with a maximum capacity of 300 kg and precision of 0.05 kg, Welmy®. Height was measured using a wall-mounted stadiometer, Seca®, model 206, to the nearest 0.1cm. The Body Mass Index (BMI) was calculated by dividing weight (kg) by height (m) squared and classified as recommended by the World Health Organization[17]. Waist circumference (WC) was measured in centimeters, with an inelastic tape measure, Sanny®, model TR-4010. The measurement was repeated three times, considering the mean value between them[17].

The %TWL was calculated by the formula: (Initial weight (Kg) – Postoperative weight(Kg) / Initial weight (Kg) x 100)[6].

Body composition was assessed by electrical bioimpedance, using a Biodynamics® equipment, model 450, following the recommendations of the European Society of Clinical Nutrition and Metabolism (ESPEN) Guidelines[16]. Based on the resistance value, the amount of fat-free mass (FFM) was estimated according to the equation proposed by Segal *et al.*[18]. Body fat was estimated using the following equation: Fat mass (FM) in kg: body weight (kg) – FFM (kg).

Food consumption

Food consumption was evaluated by nutritionists, using the R24H in three days: one day referring to the weekend and two referring to the middle of the week[19]. The first R24H was carried out in person and the two subsequent ones by telephone.

The R24H data were obtained from household measures, and then converted into grams and milliliters. To calculate calories (kcal) and nutrients (carbohydrates, protein, lipids, cholesterol and fiber), the Dietbox© (Porto Alegre, Brazil) software was used, as well as the following nutritional composition tables: the UNICAMP food composition table (Taco), from the Brazilian Institute of Geography and Statistics (IBGE), from the University of São Paulo (TBCA) and the Table by Sônia Tucunduva Phillippi (Tucunduva).

Healthy Eating Index

Diet quality was assessed according to the Healthy Eating Index (HEI), adapted for the Brazilian population, originally developed by Kennedy *et al.*[20], as described by Melendez-Araujo *et al.*[21].

The foods reported in the R24H were converted into servings according to the energy value and the group to which they belonged: cereals, fruits, vegetables, dairy products, meats, sweets and sugars, oils and fats. Then, the score was calculated by ratio and proportion, according to the number of servings consumed and the number of servings recommended. Nutrients were scored as follows: for total fat consumption, a value between 31.0% - 44.9% was considered adequate, according to the total caloric value of the diet; saturated fat between 10.0% - 14.0%; and cholesterol between 300 - 449mg. A value of 5 points was applied when the variety of foods consumed was 4-7 different items/day and 10 points for a variety greater than 7 items/day (Table 1). Culinary preparations elaborated with more than one food group were broken down into their ingredients and these were classified into their respective corresponding groups. Based on the final score, the quality of the diet was classified as good quality (greater than 100 points), needing improvement (71-100 points) and poor quality (less than 71 points).

Table 1: Energy value of food groups and HEI scoring criteria

Food groups, nutrients and varieties	Energetic value (kcal)	Points	Maximum score of 10	Minimum score of 10
Cereals, breads, tubers and roots	150	0 -10	5–9 servings	0 serving
Vegetables	15	0 - 10	4–5 servings	0 serving
Fruits	70	0 - 10	3–5 servings	0 serving
Legumes and oilseeds	55	0 - 10	1 serving	0 serving
Meats and eggs	190	0 - 10	1–2 servings	0 serving
Dairy products	120	0 - 10	3 servings	0 serving
Oil and fat	73	0 - 10	1–2 servings	0 serving
Sugars and sweets	110	0 - 10	1–2 servings	0 serving
Total fat (%)	-	0 - 10	≤30	≥45
Saturated fat (%)	-	0 - 10	<10	≥15
Cholesterol (mg)	-	0 - 10	≤300	≥450
Varieties	-	0 - 10	≥8 different items/day	≤3 different items/day

Adapted from Kennedy *et al.*[20]. HEI: Health Eating Index.

Statistical analysis

The Shapiro-Wilk test was used to assess data normality. To assess changes in parameters over time, the repeated measures ANOVA or the Friedman test was used, followed by the post hoc Tukey test, according to data distribution. To evaluate differences in %TWL between T1 and T2, the paired t test was used. Data were analyzed using the Statistical Package for Social Sciences – SPSS software, version 22.0. A significance level of 5% was adopted for all analyses.

RESULTS

In the present study, there was a predominance of female participants (89%, n=15), with a mean age of 39.7 ± 8.0 years. Regarding the degree of obesity, 71% (n=14) had grade III obesity and 29% (n=4) grade II obesity. Subjects were assessed, on average, 28.1 ± 24.3 days (T0) before surgery, 77.7 ± 23.9 days (T1) and 214.9 ± 90.1 days (T2) after surgery.

Table 2 describes the body parameters of the participants in the three moments. %TWL increased significantly between T1 and T2 ($p<0.001$). A significant reduction in weight, BMI, WC, FFM and FM was observed throughout the moments ($p<0.001$), with significantly different values between each moment ($p<0.05$).

Table 2: Percentage of total weight loss and body parameters and of subjects in the three moments

Parameters	T0	T1	T2	p value
Weight (kg)	110.9 (97.0 – 125.6)[a]	94.3 (83.5 – 107.6)[b]	79.3 (72.5 – 95.5)[c]	<0.001*
BMI (kg/m²)	44.0 ± 6.6[a]	36.9 ± 6.3[b]	32.4 ± 6.2[c]	<0.001**
TWL (%)	-	16.2 ± 3.7[b]	26.7 ± 4.7a	<0.001***
WC (cm)	121.1 ± 14.3[a]	110.0 ± 12.7[b]	98.4 ± 13.5[c]	<0.001**
FFM (kg)	62,3 ± 12,5[a]	54.5 ± 10.6[b]	51.0 ± 10.2[c]	<0.001**
FM (kg)	52.9 ± 10.0[a]	41.1 ± 9.8[b]	34.7 ± 10.7[c]	<0.001**

BMI: Body Mass Index; %TWL: Percentage of Total Weight Loss; WC: Waist Circumference; FFM: Fat-free Mass; FM: Fat Mass. N=18; T0: 28.1 ± 24.3 days before surgery; T1: 77.7 ± 23.9 days after surgery; T2: 214.9 ± 90.1 days after surgery.*Friedman test with values presented as median and interquartile range. **One-way ANOVA for repeated measures with values presented as mean ± standard deviation. ***paired t-test. Different letters on the same line represent a significant difference between the moments. $p<0.05$ statistically significant.

The subjects' caloric and macronutrient consumption are described in Table 3. A significant reduction in the consumption of total calories is observed throughout the evaluated periods, with lower values at T1 ($p<0.05$). However, kilocalorie consumption relative to body weight increased significantly over time ($p=0.006$), with higher values observed at T2. Lower values of total fat intake were observed at T1. No significant changes were observed in carbohydrate, protein and saturated fat consumption across time points ($p>0.05$).

Regarding the diet quality measured by the HEI, the diet was classified as "poor quality" at three times. With regard to the HEI components, no significant changes were observed over time in any of the items ($p>0.05$) (Table 4).

Table 3: Consumption of calories and nutrients by participants at different times.

Variables	T0	T1	T2	p value
Calories (kcal)	1077.3 (775.3 – 1317.0)[a]	705.0 (651.3 – 993.0)[b]	879.8 (734.0 – 1257.0)[a]	0.017*
Calories (kcal/kg)	8.9 (7.3 – 11.6)a	7.8 (6.4 – 9.7)a	12.6 (7.9 – 14.2)b	0.006*
Carbohydrate (g)	132.4 ± 4.7	105.5 ± 38.0	110.0 ± 43.0	0.052**
Protein (g)	60.6 (38,9 – 88.3)	38.8 (32.1 – 67.2)	55.2 (37.1 – 67.1)	0.607*
Protein/g kg	0.5 (0.4 – 0.8)	0.4 (0.3 – 0.7)	0.6 (0.5 – 0.8)	0.348*
Total fat (g)	31.7 (21.5 – 44.4)[a]	21.8 (14.6 – 32.3)[b]	29.3 (21.5 – 47.8)[a]	0.009*
Saturated fat (g)	7.94 (6.79 – 12.92)	6.53 (4.18 – 9.05)	9.52 (5.06 – 18.38)	0.125*

N=18; T0: 28.1 ± 24.3 days before surgery; T1: 77.7 ± 23.9 days after surgery; T2: 214.9 ± 90.1 days after surgery.*Friedman test with values presented as median and interquartile range.**One-way ANOVA for repeated measures with values presented as mean ± standard deviation. $p<0.05$ statistically significant.

Table 4: Participants' Healthy Eating Index (HEI) scores and components at different times

Parameters	T0	T1	T2	p value
HEI	66.6 ± 11.6	65.3 ± 6.9	67.8 ± 10.9	0.276**
Total fat	10 (10.0 – 10.0)	10 (10.0 – 10.0)	10 (10.0 – 10.0)	0.368*
Saturated fat	10 (10.0 – 10.0)	10 (10.0 – 10.0)	10 (6.7 – 10.0)	0.368*
Cereal, roots and tubers	2.9 (2.2 – 6.3)	1.9 (1.5 – 2.3)	2.8 (2.0 – 3.6)	0.128*
Vegetables	4.1 ± 2.4	4.7 ± 2.6	3.9 ± 2.7	0.670**
Fruits	3.2 ± 2.9	3.4 ± 2.6	2.6 ± 2.3	0.552**
Legumes and oilseeds	4.5 (1.4 – 6.7)	4.1 (3.7 – 6.7)	6.7 (3.3 – 9.9)	0.478*
Meats and eggs	9.7 (5.0 – 10.0)	7.4 (4.4 – 9.1)	8.0 (6.6 – 9.7)	0.078*
Milk and dairy products	1.7 (1.0 – 3.7)	2.2 (1.0 – 4.6)	2.0 (1.4 – 3.2)	0.946*
Oil and fat	0.0 (0.0 – 3.3)	0.0 (0.0 – 3.3)	2.5 (0.0 – 4.8)	0.089*
Sugars and sweets	0.0 (0.0 – 3.3)	0.7 (0.0 – 3.3)	1.3 (0.0 – 5.4)	0.701*
Variety	7.9 (6.7 – 10.0)	10 (6.7 – 10.0)	9.8 (8.3 – 10.0)	0.077*
Cholesterol	10 (9.2 – 10.0)	10 (9.7 – 10.0)	10 (9.3 – 10.0)	0.819*

HEI: Healthy Eating Index; N=18; T0: 28.1 ± 24.3 days before surgery; T1: 77.7 ± 23.9 days after surgery; T2: 214.9 ± 90.1 days after surgery. *Friedman test with values presented as median and interquartile range. **One-way ANOVA for repeated measures with values presented as mean ± standard deviation. Different letters on the same line represent statistical difference between moments. $p<0.05$ statistically significant.

DISCUSSION

In this study, subjects showed a low diet quality during all evaluated moments, despite total weight loss and reduction of body parameters.

The low quality of the diet observed can be explained, in part, by the food restriction induced by the RYGB itself. In this procedure, stomach is reduced to a capacity of between 20 and 30 ml[22], which makes adequate food intake difficult[10]. In addition, it is common to observe in bariatric patients the presence of symptoms such as nausea, vomiting, diarrhea or intestinal constipation and complications such as dumping syndrome, factors that can also compromise adequate food intake[23].

The increase in caloric intake relative to body weight (kcal/kg) six months after the BS is related to the weight loss. Although an increase in caloric intake relative to body weight was observed, the consumption of total daily calories remained low at all times evaluated, which is also expected, due to the reduction in gastric volume imposed by the surgery[22].

Regarding the consumption of foods from the different groups, it is worth mentioning a higher consumption of foods from the total fat, saturated fat and cholesterol groups throughout the follow-up period, which is a reflection of previously existing eating habits, as observed in the food recall (data not shown). These data may indicate poor adherence to the nutritional counseling received by patients throughout the perioperative follow-up. It can be observed that the food variety is extremely reduced and most patients are intolerant to some food groups.

With regard to carbohydrate consumption, it was observed an intake above the recommendation of 50g in the immediate postoperative period, with progression to 130g/day[24]. The individuals in the present study had a higher consumption of simple carbohydrates, which can trigger intestinal disorders, dumping syndrome and impair adequate glycemic control[22,23]. In addition, the higher consumption of simple carbohydrates confirms the presence of inadequate eating habits even after the surgical procedure. Evidence is conflicting regarding the relationship between binge eating and simple carbohydrate consumption in bariatric patients[25], although in many cases this behavior tends to improve after surgery[26].

In this study, there was a low daily protein intake by subjects, which corroborates the results of other studies[27,28]. In addition to reduced gastric capacity, it is also common to observe an aversion to some protein foods, which difficult the ingestion of protein-based solid foods, especially during the first months after surgery[28]. This low dietary protein ingestion could result in a higher loss of FFM than expected, as verified in the present study. An adequate protein consumption avoids the abrupt reduction of FFM and acts in the maintenance of muscle strength[8]. In this context, protein supplementation might be recommended in order to prevent protein malnutrition and loss of FFM[29]. Bertoni *et al.,*[30] observed that the intake of animal proteins by patients submitted to BS was below the proposed recommendation of 60 to 80 g/day or 1.0 to 1.5 g/kg of ideal weight g/day in the first three months after the BS. The substantial loss of FFM in patients submitted to BS is related to unfavorable clinical and nutritional evolution and worse quality of life for patients[31]. In this study, a low consumption of the milk and dairy products group was also reported. Bariatric patients may develop lactose intolerance and gastrointestinal symptoms which could make them avoid these foods[23].

With regard to lipids consumption, the subjects had a low consumption during all evaluated moments, when compared to the recommendation of Mechanick[32], which suggests an intake between 20 and 35% of the total caloric value of the diet, with emphasis on the consumption of polyunsaturated fats. However, despite the fact that the consumption of total lipids was below the recommendation, there was a higher score in HEI index from saturated fat at all three times, which can be explained

by the greater consumption of processed and high energy density foods observed in the food recall before and after BS (data not shown). In addition, almost half of the HEI score was related to the consumption of total fat, saturated fat and cholesterol. These findings suggest the existence and maintenance of an inadequate eating pattern during the follow-up. Furthermore, it is not uncommon to observe patients that believe that the BS itself completely treated the severe obesity, and often fail to understand that improvements in the quality of the diet are necessary for the success of treatment in medium and long-terms.

The consumption of fruits and vegetables evaluated in this study was also low, which may be related to the fiber content of these foods, which is normally not well tolerated by individuals submitted to BS[11]. Other studies report that a nutritionally poor diet, justified by the low consumption of fruits and vegetables, can lead to micronutrient deficiencies[13,14]. It should be noted that some patients lose adherence to treatment, tend to miss follow-up appointments, become more permissive with regard to the intake of foods of low nutritional value and neglect nutritional counselling, contributing even more so for an unbalanced diet.

It is evident that RYGB is an efficient therapeutic option for the treatment of severe obesity[2]. In the present study, %TWL at two and six months after RYGB in accordance with previous observations[33,34], and up to 20%, which is considerable adequate in the short-term period[35]. In an individual analysis, only 2 subjects (11%) showed %TWL above 20% (17.2% and 19.6%, respectively). %TWL has been used as a primarily parameter to express BS outcome, been recommended by the American Society for Metabolic and Bariatric Surgery to report weight loss results in BS studies[5]. Moreover, a significant reduction in anthropometric parameters and body composition was also observed. Although expected, weight loss should be accompanied by maximum preservation of fat-free mass, and the low diet quality observed might explain, in part, the significative loss of FFM of subjects during the follow-up, and could compromise the success of the treatment in the long-term[31]. This data ratifies the need and relevance for dietary counseling, with a focus on nutritional education during all period of follow-up, including before the RYGB. Although RYGB reduces energy intake and, therefore, body weight, the procedure can result in unbalanced diets and inadequate intake of macronutrients and micronutrients[10-12].

The study has some limitations. The moments in which the evaluations were carried out depended on the presence of the subjects in the consultations previously scheduled by the BS program, which difficult to evaluate at the defined moments. Although the sample was hospital-based, the small size was due to the short period of invitation (5 months) and the number of subjects excluded (n=9) due to the absence of at least one R24H within the three moments. This non-probabilistic sample may have affected the statistical power of some analyses, making it difficult to generalize of results and limiting the interpretation of the results to the evaluated sample. The criteria established by the Program for selecting RYGB, such as age (older patients), presence of gastric reflux and large number of associate comorbidities, minimize potential selection bias towards patients with other clinical conditions that might affect the results. The HEI evaluates the number of servings consumed during the day[20,21], and the caloric deficit throughout the perioperative period can compromise an adequate food intake of different groups, resulting in a low score. In addition, the HEI does not take into account the consumption of micronutrients, which only allows an indirect assessment of their consumption.

CONCLUSION

In the present study, subjects showed an adequate weight loss and a reduction of body parameters, although a poor diet quality was observed, indicating the maintenance of inadequate eating habits during the follow-up, including a low consumption of fruits and vegetables and the food sources of complex carbohydrates and proteins. The HEI could be useful for predicting possible nutritional deficiencies and for early nutritional intervention in patients undergoing RYGB.

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Author contributions

Gabriela Bernabé Braga: Participated in data collection, data analysis, writing of the text, and approval of the manuscript for submission; Amanda Motta de Bortoli: Participated in data collection, data analysis and approval of the manuscript for submission; Beatriz Bobbio de Brito: Participated in data collection, data analysis and approval of the manuscript for submission; Luciane Bresciani Salaroli: Participated in data analysis and approval of the manuscript for submission; Andressa Bolsoni Lopes: Participated in the study design, data analysis and approval of the manuscript for submission; Fabiano Kenji Haraguchi: Participated in the conceptualization, data analysis, funding acquisition, project administration, writing of the text, and approval of the manuscript for submission.

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Conflict of Interest

The authors declare no conflict of interest.

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Resumo

Introdução: a qualidade da dieta contribui para o sucesso do tratamento da perda de peso após a cirurgia bariátrica.

Objetivo: avaliar a perda de peso, parâmetros corporais e a qualidade da dieta durante seis meses acompanhamento de participantes submetidos ao Bypass Gástrico (BG).

Método: estudo observacional e prospectivo, realizado com pacientes adultos, de ambos os sexos, submetidos ao BG. Peso, IMC, percentual de perda de peso (%PP), circunferência da cintura, massa gorda, massa magra e a qualidade da dieta foram avaliados antes (T0) e aproximadamente no segundo (T1) e sexto (T2) meses após a cirurgia. A qualidade da dieta foi avaliada pelo Indice da Qualidade da dieta. Os dados foram analisados pela ANOVA de medidas repetidas ou teste de Friedman, com nível de significância de 5%.

Resultado: a amostra final foi composta por 18 pacientes (89% mulheres). O %PP foi de 16,2% em T1 e 26,7% em T2. Peso, IMC, circunferência da cintura, massa gorda, massa magra ($p<0,001$), ingestão calórica diária ($p=0,017$) e de gordura ($p=0,009$) reduziram ao longo dos períodos. A dieta foi classificada como de baixa qualidade, principalmente pelo baixo consumo de alimentos dos grupos de cereais, raízes, tubérculos, frutas, vegetais, legumes, carnes, ovos, leite e derivados, não diferindo ao longo dos momentos avaliados ($P>0,05$).

Conclusão: no presente estudo, apesar da adequada perda de peso e redução dos parâmetros corporais, participantes mostraram uma baixa qualidade da dieta durante o acompanhamento, indicando a manutenção de hábitos alimentares inadequados.

Palavras-chave: obesidade, cirurgia bariátrica, bypass gástrico, composição corporal, índice de alimentação saudável.