



International Research Journal of Health Education (ISSN:2637-661X)



Weight Evolution of Patients Undergoing Gastroplasty in a Hospital in Pernambuco.

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ABSTRACT

Objective: describe the weight evolution of patients undergoing gastroplasty in a hospital in Pernambuco. **Methods:** A longitudinal, retrospective and descriptive study was carried out through the nutritional monitoring form, obtaining sociodemographic, clinical and nutritional data from patients over 18 years of age who underwent Roux-en-Y gastric bypass for the treatment of obesity and who were followed up during the pre and postoperative period at the IMIP Nutrition outpatient clinic between 2012 and 2017. **Results:** There was a decrease in BMI from 47.35 ± 7.09 kg / m² in the preoperative period to 29.65 ± 4.46 kg / m² in the 24 postoperative month and there was progressive weight loss in percentage according to the 6 months (45 , 23 ± 12.18), 12 (60.37 ± 13.98), 18 (64.80 ± 15.66), and finally, month 24 reaching $67.24 \pm 20.38\%$. **Conclusion:** Roux-en-Y gastric bypass proved to be efficient in weight loss and decrease in BMI, helping in the long term in weight loss and, therefore, in a better quality of life. In addition, the nutritional monitoring, which is essential for adherence and maintenance of healthy eating habits in the pre- and postoperative period, is also noteworthy.

Keywords: Obesity. Bariatric surgery. Gastroplasty. Quality of life. Weight loss.

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How to cite this article:

Izabelly Cristine Ramos Gomes de Souza, Hannah Fernandes Cavalcanti Brandão, Bruno Soares de Sousa, Thamires Otaviano Marques de Souza. Weight Evolution of Patients Undergoing Gastroplasty in a Hospital in Pernambuco. International Research Journal of Health Education, 2021, 4:16.

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INTRODUCTION

Obesity is recognized as a global health problem, so that, according to the WHO (2019), in 2016, more than 1.9 billion adults aged 18 and over were overweight. Of these, more than 650 million adults were in this condition characterized by an excessive accumulation of fat and, classified through the anthropometric parameter, body mass index (BMI), which classifies obesity from values greater than 30.0kg/m².¹

It is known that obesity acts as an important risk factor for morbidity and mortality and for chronic non-communicable diseases, such as cardiovascular diseases, diabetes mellitus, among several others.^{4,5} In addition, obese individuals have difficulty maintaining and / or losing weight, especially when they are severely obese, that is, BMI above 40 kg/m², in this population, bariatric surgery is successful and effective in most of its applications.⁶

However, according to the Brazilian Society of Bariatric and Metabolic Surgery (BSBMS, 2006), this surgical treatment becomes necessary only in patients with a BMI above 40kg/m² and in those with an index between 35 and 40kg/m² when in association comorbidities, including Systemic Arterial Hypertension (SAH) and dyslipidemia.⁷

Bariatric surgery techniques can be divided into disabsorptive, restrictive or mixed, the latter being considered one of the most effective techniques, especially with regard to the presence of comorbidities. Among the surgeries that present mixed techniques, the Roux-en-Y gastric bypass (DGYR) stands out.⁴

DGYR is a technique characterized by dividing the stomach into two parts, resulting in limiting the amount of food that can be eaten. The remaining segment, formed by the stomach, duodenum and the beginning of the small intestine, is joined laterally to the intestine itself, forming a Y. This way, the food passes through a small stomach segment and then goes directly

to the intestine without having suffered the initial phase. digestion.⁸

DGYR not only decreases the contact of nutrients consumed with a large part of the stomach, duodenum and proximal jejunum, it also influences the secretion of hormones that delay gastric emptying and stimulate satiety such as the glucagon-like-1 peptide (GLP-1) and polypeptide Y (PYY) so their results demonstrate short to long-term efficiency.⁹ These benefits assist in maximum weight loss that varies on average from 35 to 40% of the initial weight or approximately 60 to 70% of excess body weight between the 12th and 24th month after surgery.¹⁰

Even though this surgical technique has benefits, it is essential that patients are made aware of the possible complications that may occur, such as gastrointestinal and hemoperitoneum hemorrhage, marginal ulceration, intestinal obstruction, stenosis and / or anastomosis dehiscence as well as nutritional disorders, the latter reported by the appearance the deficiency of nutrients such as proteins and B vitamins, in addition to minerals.^{11,12}

Given the above, this study aims to describe the weight evolution of patients undergoing gastroplasty in a hospital in Pernambuco.

METHODS

This is a longitudinal, retrospective and descriptive study, carried out in the Nutrition clinic of the Instituto de Medicina Integral Professor Fernando Figueira - IMIP. The study included patients of both sexes, over 18 years of age, who underwent Roux-en-Y gastric bypass, for the treatment of obesity, and who were followed up pre- and postoperatively in the nutrition clinic between the years of 2012 and 2017. Patients found to other surgical techniques and who did not undergo preoperative follow-up at the hospital were excluded from the study.

Regarding sociodemographic, clinical and nutritional data, there was the collection through

the outpatient follow-up form. Sociodemographic data were collected, such as age and gender, and clinical parameters, such as: presence of comorbidities (hypertension and diabetes), physical activity and number of preoperative consultations.

With regard to anthropometric data, weight, height and BMI for the first and last consultation prior to surgery were collected in the preoperative period. In the postoperative period, the percentage of loss of excess weight and BMI was assessed at 6, 12, 18 and 24 months after surgery.

The BMI classification followed the recommendation of the cutoff points established by the World Health Organization (WHO) for adults, grade I obesity (BMI between 30 and 34.9 kg / m²), grade II obesity (BMI between 35 and 39.9 kg / m²) and grade III obesity (BMI > 40 kg / m²). Preoperative weight loss was the result of the difference between the weight of the first and last consultation before surgery. The ideal

weight was defined using the Metropolitan Life Foundation (MLF) table for men: Ideal Weight (PI) = 61.2328 + {(Height - 1.6002) x 53.5433} and for women: PI = 53.975 + {(Height - 1.524) x 53.5433}. Hence the calculation of Excess Weight (EP), corresponding to EP = Current weight - Ideal weight and Percentage of excess weight = (EP x 100) / PI, followed.

According to the service protocol, to consider the patient fit for gastroplasty, changes in eating habits and weight loss referring to 10% of the initial weight are considered.

For statistical analysis, data were entered in the Microsoft Office Excel program and analyzed using SPSS version 13.0 (SPSS Inc., Chicago, IL, USA). Continuous variables were tested for normal distribution, using the Kolmogorov-Smirnov test, and were described as means and standard deviations. When comparing two and three or more means of a paired sample, the paired Student's t test and ANOVA for repeated measures were used.

Table 1. Preoperative characterization of patients undergoing Roux-en-Y gastric bypass, Instituto de Medicina Integral Prof. Fernando Figueira- Recife - PE, 2012-2017

Variables	N	%
Sex		
Feminine	29	85,3
Male	5	14,7
Diabetes		
Yes	7	20,6
No	27	79,4
Hypertension		
Yes	22	64,7
No	12	35,3
Physical activity		
Yes	14	41,2
No	20	58,8
Number of preoperative consultations		
Up to 5	21	61,8
Greater than 5	13	38,2
Initial BMI*		
Obesity II	4	11,8
Obesity III	30	88,2

* Classification according to WHO: Obesity II: 35 - 39.9 kg / m² and Obesity III:> 40 kg / m²

Table 2. Description of BMI and %PEP of patients submitted to DGYR at different times, Instituto de Medicina Integral Prof. Fernando Figueira- Recife - PE, 2012-2017

	Preoperative		Postoperative			
	BMI		%PEP			
	Initial	Surgery	6 months	12 months	18 months	24 months
N	34	34	32	30	27	20
Mean	47,35	45,19	34,28	30,74	30,87	29,65
DP	± 7,09	± 6,19	± 5,24	± 4,46	± 4,82	± 4,46
			6 months	12 months	18 months	24 months
N			32	30	27	20
Mean			45,23	60,37	64,80	67,24
DP			± 12,18	± 13,98	± 15,66	± 20,36

% PP: Percentage of weight loss; BMI: body mass index

The study was approved by the Ethics and Research Committee of the Instituto de Medicina Integral Professor Fernando Figueira, according to Resolution 466-12 of the National Health Council and the Declaration of Helsinki for research with human beings (2000), under CAAE 19935019.3.0000.5201.

RESULTS

Table 1 shows, according to the preoperative characteristics of the patients, that there was a predominance of females and that the majority of individuals had hypertension and were classified as grade III obesity.

Regarding BMI and weight loss in percentage, it was seen that patients showed a decrease in BMI for the overweight range in the 24th month after surgery (29.65 ± 4.46) when compared to the BMI presented at the beginning, pre- surgery (47.35 ± 7.09). With regard to weight loss in %, it was demonstrated that patients had progressive weight loss, according to months 6, 12, 18, 24, (45.23 ± 12.18), (60.37 ± 13.98), (64.80 ± 15.66), reaching the final value $67.24 \pm 20.38\%$, respectively.

CONCLUSION

It is concluded that the Roux-en-Y gastric bypass technique proved to be efficient in weight loss and BMI decrease. Demonstrating that this surgical technique helps in the primary objective of this population, which is weight loss, mainly in

a chronic way, as could be observed in this study. Resulting in the improvement of the quality of life and in the most favorable clinical picture of this population.

In addition, nutritional monitoring proved to be essential for weight loss in the pre and postoperative period of these patients. Highlighting nutritional monitoring as an essential component in the management of bariatric patients by helping to adhere to healthy eating habits, avoiding the risk of weight recovery, facilitating the detection of possible nutritional deficiencies that may develop according to the technique used, assist in weight loss in the pre and post surgical moments, in addition to contributing to the maintenance of a good quality of life.

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