Sleeve Gastrectomy versus Roux-en-Y Gastric Bypass for Treating Obesity in Elderly Patients: 3-year Outcomes of a Randomized Trial

Authors: Denis Pajecki, Anna Carolina Batista Dantas, Moises Carmo dos Anjos Pinheiro, Giovanna Cavanha Corsi, Maria Carolina Gonçalves Dias, Marco Aurelio Santo

Institution: Bariatric and Metabolic Surgery Unit – Hospital das Clinicas
University of Sao Paulo Medical School – Sao Paulo/Brazil

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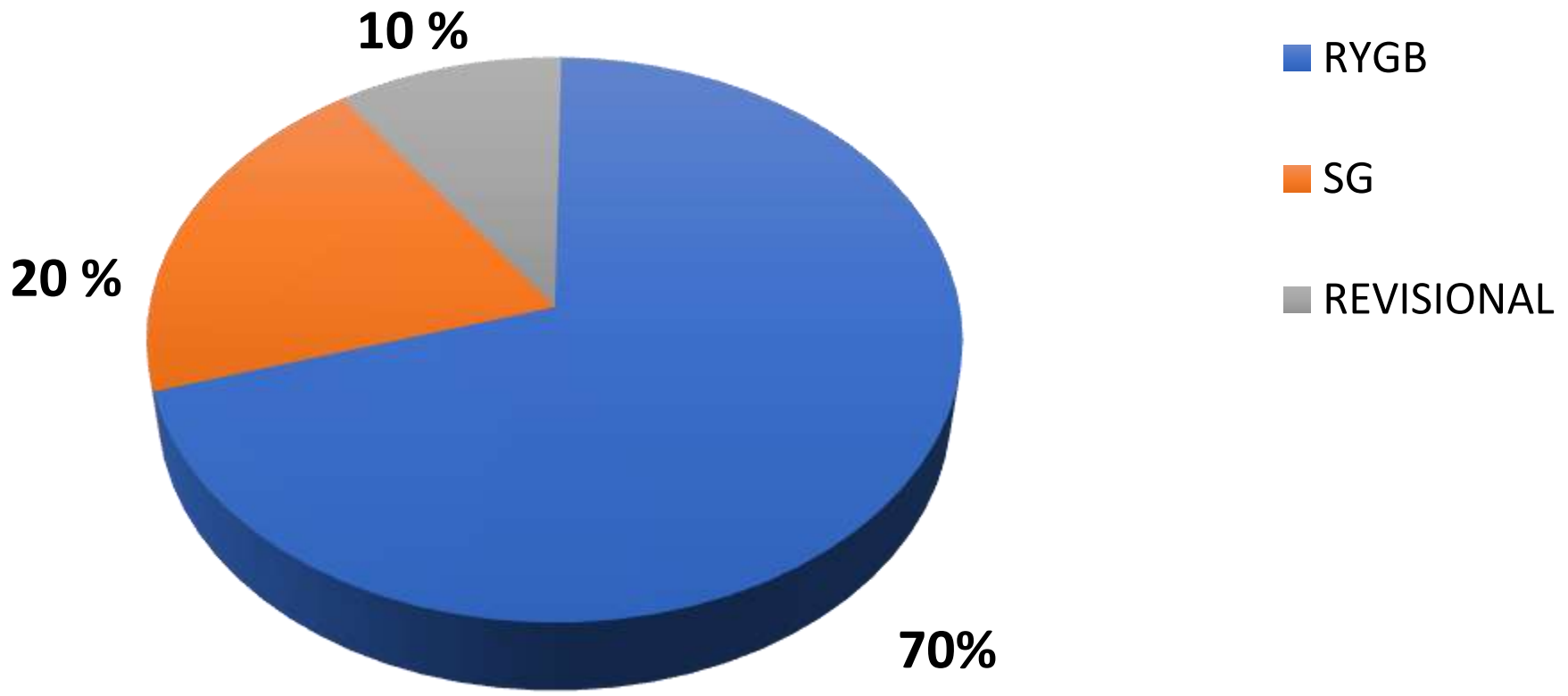
I have no potential conflict of interest to report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INTRODUCTION

- Obesity has a high impact on the aging population [1]
- Associated clinical conditions, functional impairment, and mortality [2]
- Metabolic and bariatric surgery in safe in patients > 65 years [3]
- Significant weight loss and clinical improvement on short follow-up [4]
- Still scarce data on long-term outcomes

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2. Wang Y. Obes Surg. 2016 PMID: 27714526.
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METHODS

- Randomized Clinical Trial – clinicaltrials.gov NCT03339791
- Sleeve Gastrectomy vs. Roux-en-Y Gastric Bypass
- Procedures from September 2017 to May 2019
- Public Health Teaching Hospital
- N = 36

- Primary outcome: weight loss
- Secondary outcomes: surgical safety and impact on comorbidities

RESULTS

Table 1 – Baseline patient characteristics

	LSG (n = 18)	LRYGB (n = 18)	*P* value
Age, mean ± SD, yr	68 ± 2.8	67 ± 1.9	.65
Female, n (%)	18 (100)	13 (72.2)	.01
Admission weight, mean ± SD, kg	125.27 ± 26.1	127.27 ± 17.7	.78
Admission BMI, mean ± SD, kg/m^2	49.01 ± 8.2	50.81 ± 5.6	.28
Preoperative weight, mean ± SD, kg	109.96 ± 4.0	117.98 ± 17.8	.18
Preoperative BMI, mean ± SD, kg/m^2	43.13 ± 5.2	46.97 ± 4.6	.03
Preoperative weight loss, mean ± SD, kg	15.31 ± 17.0	9.28 ± 5.6	.16
Co-morbidities			
Diabetes, n (%)	12 (66.6)	13 (72.2)	.71
Hypertension, n (%)	18 (100)	16 (88.8)	.14
Dyslipidemia, n (%)	6 (33.3)	7 (38.8)	.72
Sleep apnea, n (%)	2 (11.1)	7 (38.8)	.05
Osteoarthrosis, n (%)	15 (83.3)	10 (55.5)	.07

BMI: Body Mass Index; LRYGB: Laparoscopic Roux-en-Y Gastric Bypass; LSG: Sleeve Gastrectomy; T2DM: Type 2 Diabetes Mellitus

RESULTS

Table 2 – Weight loss during 3 years of follow-up

	Variables	All	LRYGB	LSG	p-value
		n=36	n=18	n=18	
12 months	Weight	83.2 ± 2.1	82.5 ± 3.2	83.9 ± 2.6	0.634
	%TWL	26.5 ± 1.3	29.9 ±1.5	23.1 ± 1.9	0.008
	BMI	32.8 ± 0.5	32.8 ± 0.7	32.9 ± 0.8	0.887
	%EWL	60.4 ± 2.7	64.9 ± 2.9	56.0 ± 4.4	0.105
24 months	Weight	81.8 ± 2.1	79.3 ± 3.3	84.1 ± 2.7	0.260
	BMI	32.2 ± 0.5	31.4 ± 0.6	33.0 ±0.9	0.153
	%TWL	27.7 ± 1.6	32.8 ± 1.8	22.9 ± 2.0	0.001
	%EWL	62.6 ± 3.0	70.1 ± 2.7	55.5 ± 4.8	0.014
36 months	Weight	86.4 ± 3.6	85.5 ± 4.9	88.2 ± 5.3	0.730
	BMI	34.4 ± 1.0	33.6 ± 1.1	35.8 ± 2.0	0.322
	%TWL	25.7 ± 2.1	30.3 ± 2.2	17.2 ± 2.2	0.001
	%EWL	56.2 ± 4.1	63.1 ± 4.3	43.5 ± 6.7	0.018

Weight in kg; BMI in kg/m^2
BMI: Body Mass Index; LRYGB: Laparoscopic Roux-en-Y Gastric Bypass; LSG: Sleeve Gastrectomy; %TWL: Total Weight Loss; %EWL: Excess Weight Loss

RESULTS

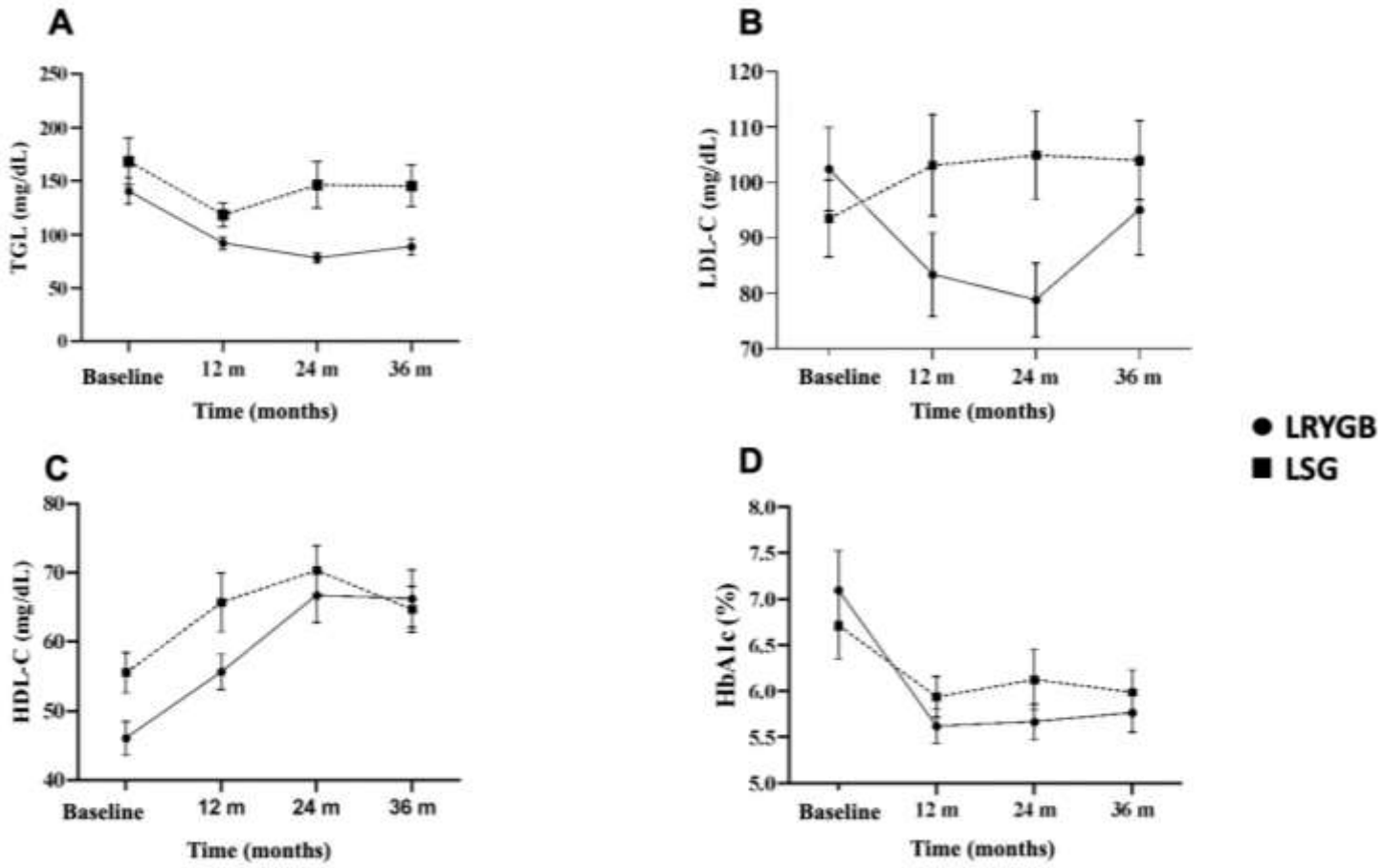
Table 3 – Laboratory data during three years of follow-up

Variables	LRYGB					LSG				
	Before	12 m	24 m	36 m	*p*	Before	12 m	24 m	36 m	*p*
Hemoglobin (g/dL)	13.6 ± 0.2	13.1 ± 0.3	13.18 ± 0.3	13.4 ± 0.3	0.365	13.3 ± 0.3	12.8 ± 0.3	12.9 ± 0.3	12.8 ± 0.4	0.067
Ferritin (ng/dL)	212.2 ± 32.0	204.3 ± 32.3	166.0 ± 24.4	146.0 ± 23.5	0.769	183.9 ± 29.0	191.8 ± 24.7	159.7 ± 25.4	136.0 ± 18.3	0.017
Albumin (g/dL)	4.2 ± 0.06	4.1 ± 0.07	4.3 ± 0.07	4.2 ± 0.07	0.239	4.37 ± 0.07	4.3 ± 0.08	4.49 ± 0.06	4.24 ± 0.1	0.176
PTH (pg/mL)	61.6 ± 5.8	59.2 ± 4.0	73.7 ± 5.6	80.2 ± 6.4	0.000	52.5 ± 4.8	47.7 ± 4.0	58.1 ± 8.2	56.0 ± 7.4	0.132
D vitamin (ng/mL)	26.8 ± 4.9	31.5 ± 2.0	26.0 ± 2.3	23.0 ± 2.0	0.004	23.2 ± 2.0	29.1 ± 2.2	30.6 ± 2.0	28.2 ± 3.4	0.272
B12 vitamin (pg/mL)	410.3 ± 34.2	522.1 ± 77.2	522.6 ± 52.0	563.5 ± 114.0	0.733	470.5 ± 34.9	673.8 ± 95.0	691.9 ± 111.1	657.6 ± 97.1	0.220

% LRYGB laparoscopic Roux-en-Y Gastric Bypass, *LSG* sleeve gastrectomy, *BMI* body mass index, *TWL* total weight loss, *%EWL* excess weight loss, *PTH* parathyroid hormone

RESULTS

Figure 1 - Levels of laboratory data from baseline to 3-year follow- up: Triglyceride (A), LDL (B), HDL (C), and HbA1c (D)



After LRYGB, HbA1c ($p < 0.001$), HDL ($p < 0.001$), LDL ($p = 0.007$), and triglyceride ($p < 0.001$) levels improved significantly. After LSG, a significant difference was only seen in HDL levels ($p = 0.004$).

RESULTS

- No patients were lost to follow-up until 36 months of data collection.
- More recently, two patients in the LSG group died of causes unrelated to the bariatric surgery: COVID-19 and arterial mesenteric thrombosis.
- Adherence to micronutrient supplementation was significantly more frequent in the LSG group (72.2% vs. 22.2%, p = 0.003).
- Data collection on this study was limited due to adversities in clinical follow-up during the COVID-19 pandemic

Original article

Bariatric surgery in the elderly: a randomized prospective study comparing safety of sleeve gastrectomy and Roux-en-Y gastric bypass (BASE Trial)

Denis Pajecki, M.D., Ph.D.[a], Anna Carolina Batista Dantas, M.D.[a,*],
Ana Lumi Kanaji, M.D.[b], Daniel Riccioppo Cerqueira Ferreira de Oliveira, M.D., Ph.D.[a],
Roberto de Cleva, M.D., Ph.D.[a], Marco Aurelio Santo, M.D., Ph.D.[a]

Sleeve Gastrectomy Versus Roux-en-Y Gastric Bypass in the Elderly: 1-Year Preliminary Outcomes in a Randomized Trial (BASE Trial)

Denis Pajecki[1] · Anna Carolina Batista Dantas[1] · Francisco Tustumi[1,2] · Ana Lumi Kanaji[3] · Roberto de Cleva[1] · Marco Aurelio Santo[1]

Sleeve Gastrectomy Versus Roux-en-Y Gastric Bypass for Treating Obesity in Patients > 65 Years Old: 3-Year Outcomes of a Randomized Trial

Denis Pajecki[1] · Moisés Carmo dos Anjos Pinheiro[2] · Anna Carolina Batista Dantas[1] · Giovanna Cavanha Corsi[2] · Maria Carolina Gonçalves Dias[2] · Marco Aurelio Santo[1]

CONCLUSIONS

- Bariatric surgery in elderly patients with severe obesity is effective throughout three years of follow-up.
- LRYGB has shown more significant weight loss and control of lipid and HbA1c levels than LSG.
- Future studies with longer and more structured follow-ups could bring quality data on the remission of obesity-associated diseases.

BASE TRIAL Investigators


Denis Pajecki, MD, PhD


Marco Aurelio Santo, MD, PhD


Anna Carolina Batista, MD


Ana Lumi Kanaji, MD


Roberto de Cleva, MD, PhD


Daniel Riccioppo, MD, PhD


Veronica Medeiros, RDN


Giovanna Corsi, RDN


Moises Pinheiro, RDN

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CIRURGIA DO APARELHO DIGESTIVO | HCFMUSP

Hospital das Clínicas Fmusp

MEDICINA USP 110 ANOS

IFSO NAPOLI 2023

Thank you!

anna.carolina@hc.fm.usp.br
Twitter: @batistacarolina
Instagram: @dracarolinabatista