

The Influence of Pregnancy on Weight Loss After Previous Bariatric Surgery

Robin Berk MD, Diego L Lima MD MSc, Miriam Steinberger MD, Valentina Viscarret MD, Rie Seu BA, Victoria Konovalova MD, Diego Camacho MD

Department of Surgery, Montefiore Medical Center, Bronx, New York



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Objectives

- To analyze the effects of post-operative pregnancy on excess BMI loss percentage (EBMIL%) after primary Sleeve Gastrectomy (SG) and Roux-en-Y Gastric Bypass (RYGB) after a 4-year follow up period.
- To identify any pregnancy-related complications in patients who became pregnant post-operatively.

Background

- Obesity + pregnancy → excess gestational weight gain → post-partum weight retention
- American College of Obstetricians and Gynecologists (ACOG): recommend postponing pregnancy 2 years after surgery
- Montefiore Medical Center: refer pregnant post-op patients to High-Risk Pregnancy Group → specialized care and surveillance of maternal weight + nutritional status



Methods

- Data Review: MBSAQIP, Montefiore Medical Center, January 2017 – December 2018
- Inclusion Criteria: 191 female patients, BMI > 35 kg/m² with comorbidities or BMI > 40 kg/m², between 20 and 40 years old, who underwent laparoscopic SG or RYGB
- Exclusion Criteria: revisions, conversions, patients without 4-year follow up, patients who were currently pregnant
- Data Collection: presence of pregnancy after bariatric surgery, median weight + BMI before surgery, surgical approach, date of last follow up visit, median weight + BMI at 4-year follow up visit
 - Pregnancy group: pregnancy-related complications in mother and/ or fetus

Patient Characteristics

	<u>Pregnant n= 32</u>	<u>Non-pregnant n=159</u>	<u>p-value</u>
Median age (IQR) ^a	29 (26-32.8)	31 (28-34)	0.343
Median BMI preop (IQR), in Kg/m2	43.2 (39.9 - 48.2)	43.7 (40.7-48.4)	0.583
ASA ^b			0.542
II	14 (43.8)	71 (44.7)	
III	18 (56.3)	88 (55.3)	
Surgical Technique			0.057
Sleeve	23 (71.9)	136 (85.5)	
Gastric Bypass	9 (28.1)	23 (14.5)	
Hypertension	4 (12.5)	28 (17.6)	0.34
Diabetes Mellitus	8 (25)	13 (8.2)	0.011
CVA ^c	0	2 (1.2)	0.816
Smoking status			0.212
Former	9 (28.1)	26 (16.4)	
Current Smoker	0	4 (2.5)	
COPD ^d	0	1 (0.6)	0.832
GERD ^e	6 (18.8)	40 (25.2)	0.299
OSA ^f	5 (15.6)	22 (13.8)	0.487
HLD ^g	2 (6.3)	21 (13.2)	0.216
Anticoagulation use	2 (6.3)	1 (0.6)	0.073

- a. IQR – Interquartile Range
- b. ASA – American Society of Anesthesiologists
- c. CVA – Cardiovascular accident
- d. COPD – Chronic obstructive pulmonary disease
- e. GERD – Gastroesophageal reflux disorder
- f. OSA – Obstructive sleep apnea
- g. HLD – Hyperlipidemia

Results: Outcomes at 4-year Follow Up

	<u>Pregnant n= 32</u>	<u>Non-pregnant n=159</u>	<u>p-value</u>
Median BMI ^a postop (IQR) ^b , in Kg/m ²	33.3 (30.1 - 38.5)	33.5 (28.9 - 38.6)	0.872
Mean EBMIL% ^c (SD) ^d	50.4 (23.5)	55.5 (30.4)	0.371
Median weight before surgery (IQR), in kg	112.7 (107.9 - 132.2)	117 (106 - 132.5)	0.086
Median weight after surgery (IQR), in kg	89.5 (79.5 - 111)	88.9 (78 - 103)	0.872

- a. BMI – Body Mass Index
- b. IQR – Interquartile range
- c. EBMIL% – Excess Body Mass Index Loss
- d. SD – Standard Deviation

Results: Pregnancy-related Complications in Post-Operative Bariatric Patients

<u>Pregnant n= 32 (%)</u>	
GHTN ^a	6 (18.8)
GDM ^b	4 (12.5)
Anemia	4 (12.5)
GBS ^c	2 (6.2)
PPROM ^d	1 (3.1)
LT IOL ^e	1 (3.1)
Pre-eclampsia	1 (3.1)
Twins	1 (3.1)
Fetal Bradycardia	1 (3.1)
Chorioamnionitis	1 (3.1)

Years Post-Op	Pregnant Patients (n)
0-1	1
1-2	9
2-3	10
3-4	9

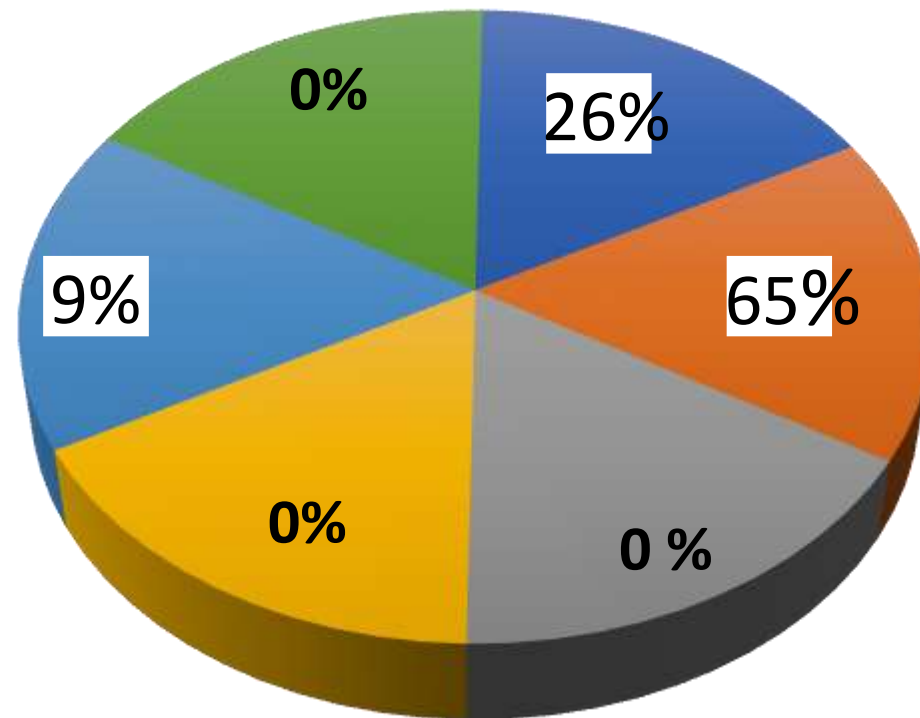
- a. GHTN – Gestational hypertension
- b. GDM – Gestational diabetes mellitus
- c. GBS – Group B Streptococcus
- d. PPRM – Preterm premature rupture of the membranes
- e. LT IOL – Late term induction of labor

Limitations and Implications

- Limitations:
 - Small sample size
 - Selection and attrition bias
- Future studies:
 - Stratification between weight loss maintenance in laparoscopic SG compared to RYGB
 - Stratification between weight loss after pregnancy at different years post-operatively
- Implications:
 - ACOG guidelines

Conclusions

- The mean EBMIL% within a 4-year follow up after laparoscopic SG and RYGB had no significant difference between patients who became pregnant post-operatively and patients who did not.
- Pregnancy-related complications in patients who became pregnant post-operatively were minimal.



- RYGB
- SG
- OAGB
- DS/SADI-S
- REVISIONAL
- ENDOSCOPIC