Do Bariatric Patient's in Rural Areas Achieve Comparative Weight loss as National Average? Single Center experience in Appalachia West Virginia.

Jenalee Corsello MD, Ruth Gerola MD, Semeret Munie MD, D. Blaine Nease MD

Marshall University: Department of Surgery
Huntington, West Virginia

Introduction

- Obesity is a leading public health concern with a 50-100% increased risk of premature death, resulting in around 300,000 deaths per year.
- The United States is the leading country for obesity with more than 33% of Americans being considered obese.
- West Virginia has the leading rate of obesity in the nation with limited knowledge in society about long lasting impact of morbid Obesity.
- This study aimed to evaluate if the limited societal support as well as resources for bariatric patients has an impact of the amount of weight patients are able to lose. We looked at the weight loss outcomes of a single bariatric center of excellence in Cabell county, West Virginia.

Methods/Results

- Retrospective review of patients who underwent bariatric surgery between the years of 2017 and 2018 at Center for Surgical Weight Control and Cabell Hospital in Huntington, West Virginia.
- Included subjects were >18 year old and underwent primary minimally invasive sleeve or gastric bypass operations.
- 290 patients that underwent either vertical sleeve gastrectomy or roux-en-y gastric bypass between the years of 2017 and 2018, all robotic assisted
  - 249 vertical sleeve gastrectomies and 41 bypasses
  - 55 men, 235 women
- Outcomes:
  - 6 months:
    - 56% of bypasses lost 50% or greater of excess body weight
    - 31% of sleeves lost 50% or greater of excess body weight
  - 1 year:
    - 78% of bypasses lost 50% or greater of excess body weight
      - 70% of bypasses lost 60% or greater
    - 65% of sleeves lost 50% or greater of excess body weight
  - 2 years:
    - 86% of bypasses lost 60% or greater of excess body weight
    - 67% of sleeves lost 50% or greater of excess body weight

Graphs/Charts

Variables	Group	n	%
Race	Caucasian	287	98.9
	AA	3	1.1
Gender	Male	55	18.9
	Female	235	81.1
Bariatric Surgery Procedure	Vertical Sleeve Gastrectomy	249	85.7
	Roux-en-y gastric Bypass	41	14.3
Age	45 (21-72)		
Pre-operative BMI	49 (35-70)		

Image 1: Demographics

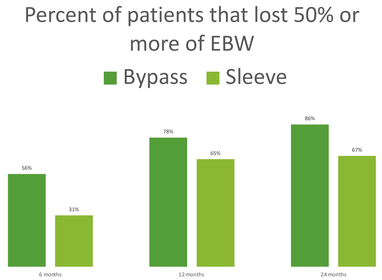


Image 2: percent of pts that lost 50% or more IBW

Bariatric surgical procedure	n	Variable	Mean	95% CI
Vertical sleeve gastrectomy	249	% of excess weight loss in 6 months	46.34106	(43, 49.6)
	199	% of excess weight loss in 1 year	57.54555	(51.9, 63.2)
	95	% of excess weight loss in 2 yrs	61.06316	(51, 71.1)
Roux-en-y gastric bypass	41	% of excess weight loss in 6 months	54.04146	(49.1, 59)
	27	% of excess weight loss in 1 year	65.79615	(59.4, 72.1)
	7	% of excess weight loss in 2 yrs	88.46667	(73.9, 103.1)

Image 3: average percent IBW lost by procedure and time interval

Group	Standard %	Average Observed %	se	p-value
Vertical Sleeve Gastrectomy	50	61	5.1	0.002
Roux-en-y gastric Bypass	60	88.5	5.6	0.015

Image 4: percent IBW lost at 2 years compared to national expected

Discussion

There is an expected amount of weight loss a patient should have depending on the type of surgery they undergo. A patient that has a RNYGB should lose at least 60% of their excess body weight by 2 years, and a patient that has undergone VSG should lose at least 50% of their excess body weight by 2 years.

Our patients were successful in meeting and succeeding the expected percentage of IBW loss after both VSG and RNYGB. Despite the limited resources post bariatric patients have in rural areas compared to urban regions, we have found similar weight loss that was noted up to two years out from surgery similar to well-known national data. This shows the importance of making bariatric surgery more accessible in rural areas as it is in urban cities.

References

Barry, R.G., Amiri, F.A., Gress, T.W., Nease, D.B., Canterbury, T.D., 2017. Laparoscopic vertical sleeve gastrectomy: A 5-year veterans affairs review. Medicine 96, e7508. https://doi.org/10.1097/MD.0000000000007508

Douros, J.D., Niu, J., Sdao, S., Gregg, T., Merrins, M.J., Campbell, J., Tong, J., D'Alessio, D., 2019a. Temporal plasticity of insulin and incretin secretion and insulin sensitivity following sleeve gastrectomy contribute to sustained improvements in glucose control. Molecular Metabolism 28, 144–150. https://doi.org/10.1016/j.molmet.2019.07.003

Pucci, A., Batterham, R.L., 2019. Mechanisms underlying the weight loss effects of RYGB and SG: similar, yet different. Journal of Endocrinological Investigation 42, 117–128. https://doi.org/10.1007/s40618-018-0892-2

Salminen, P., Helmiö, M., Ovaska, J., Juuti, A., Leivonen, M., Peromaa-Haavisto, P., Hurme, S., Soinio, M., Nuutila, P., Victorzon, M., 2018. Effect of Laparoscopic Sleeve Gastrectomy vs Laparoscopic Roux-en-Y Gastric Bypass on Weight Loss at 5 Years Among Patients With Morbid Obesity: The SLEEVEPASS Randomized Clinical Trial. JAMA 319, 241. https://doi.org/10.1001/jama.2017.20313