

RISK OF READMISSION AND REOPERATION IS HIGHER IN BLACK PATIENTS UNDERGOING CONTEMPORARY BARIATRIC SURGERY



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Introduction

- The National Center for Health Statistics reports racial disparities in the prevalence of obesity; 49.6% of African American or Black and 42.2% of European American or White populations are obese.¹
- Studies show Black patients lose less weight, have an increased risk of post-operative complications and readmission relative to White patients after bariatric surgery.²⁻¹⁰
- Our objective was to evaluate the impact of Black race on short-term outcomes after laparoscopic roux-en-y gastric bypass (LRYGB) or laparoscopic sleeve gastrectomy (LSG).

Hypothesis

- Black race is associated with increased odds of perioperative mortality, morbidity, readmission, and reoperation after either LRYGB or LSG relative to White race.

Methods

- The Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) database was queried for patients who underwent LSG or LRYGB with race reported as Black or White between 2015 and 2017.
- Exclusion criteria: age < 18, race other than White or Black, and emergent, revisional, or converted to open cases.
- Primary outcomes included: all cause mortality, morbidity, readmission, and re-operation
- Demographics and perioperative data were compared using descriptive statistics.
- Adjusted odds ratios for the risk of race on outcomes was determined using multivariable logistic regression analysis controlled for the following: age, sex, BMI, ASA class, HTN, diabetes, HLD, COPD, oxygen dependent, GERD, renal failure, history of DVT, history of PE, chronic steroid use, and smoking.

Tables

Table 1: Estimated adjusted odds ratios comparing black to white patients - LSG

<i>Outcomes of LSG (n=253,080)</i>	OR	95% CI	<i>p-value</i>
<i>Overall Morbidity</i>	<i>1.02</i>	<i>0.95-1.09</i>	<i>0.632</i>
<i>Overall Mortality</i>	<i>2.11</i>	<i>1.13-3.77</i>	<i>0.014</i>
<i>Unplanned Readmission Related to Surgery</i>	<i>1.55</i>	<i>1.45-1.65</i>	<i><0.001</i>
<i>Unplanned Reoperation Related to Surgery</i>	<i>1.20</i>	<i>1.05-1.37</i>	<i>0.008</i>

Table 2: Estimated adjusted odds ratios comparing black to white patients - LRYGB

<i>Outcomes of LRYGB (n=95,614)</i>	OR	95% CI	<i>p-value</i>
<i>Overall Morbidity</i>	<i>1.00</i>	<i>0.91-1.09</i>	<i>0.941</i>
<i>Overall Mortality</i>	<i>1.72</i>	<i>0.62-4.13</i>	<i>0.252</i>
<i>Unplanned Readmission Related to Surgery</i>	<i>1.46</i>	<i>1.35-1.58</i>	<i>0.000</i>
<i>Unplanned Reoperation Related to Surgery</i>	<i>1.20</i>	<i>1.04-1.37</i>	<i>0.008</i>

LRYGB = Laparoscopic Roux-en-Y Gastric Bypass, LSG = Laparoscopic Sleeve Gastrectomy

Results

- 19.3% of patients self reported as Black and 80.7% as White.
- 72.6% of patients underwent LSG and 27.4% underwent LRYGB.
- In the LSG cohort, there was no difference in morbidity but Black patients had a higher risk of mortality (OR=2.11, p<0.01), unplanned readmission (OR=1.55, p<0.001) and reoperation (OR=1.20, p=0.008). The estimated mean LOS for Black patients was 0.14 days longer (p < 0.001).
- In the LRYGB cohort, there was no difference in risk of morbidity and mortality. Black patients had a higher risk of unplanned readmission (OR=1.46, p=0) and reoperation (OR=1.20, p=0.008). The estimated mean length of stay (LOS) for Black patients was 0.15 days longer (p < 0.001).

Conclusions

- Black patients had a higher risk of mortality following LSG.
- Black patients had a higher risk of unplanned readmission and reoperation following LSG and LRYGB.
- LOS was 0.15 days longer for Black patients on average after LRYGB.
- Further study is needed to identify the root cause of racial disparities in outcomes of bariatric surgery.

References

- Hales CM, C.M., Fryar CD, Ogden CL. Prevalence of obesity and severe obesity among adults: United States, 2017–2018., in NCHS Data Brief, no 360. 2020: Hyattsville, MD: National Center for Health Statistics.
- Wood, M.H., et al., Association of Race With Bariatric Surgery Outcomes. JAMA Surg, 2019. 154(5): p. e190029.
- Madan, A.K., et al., Are African-Americans as successful as Caucasians after laparoscopic gastric bypass? Obes Surg, 2007. 17(4): p. 460-4.
- Gullick, A.A., et al., Association of race and socioeconomic status with outcomes following laparoscopic Roux-en-Y gastric bypass. Obes Surg, 2015. 25(4): p. 705-11.
- Khorgami, Z., et al., Effect of ethnicity on weight loss after bariatric surgery. Obes Surg, 2015. 25(5): p. 769-76.
- Buffington, C.K. and R.T. Marema, Ethnic differences in obesity and surgical weight loss between African-American and Caucasian females. Obes Surg, 2006. 16(2): p. 159-65.
- Baldrige, A.S., et al., Factors Associated With Long-Term Weight Loss Following Bariatric Surgery Using 2 Methods for Repeated Measures Analysis. Am J Epidemiol, 2015. 182(3): p. 235-43.
- Admiraal, W.M., et al., Ethnic differences in weight loss and diabetes remission after bariatric surgery: a meta-analysis. Diabetes Care, 2012. 35(9): p. 1951-8.
- Telem, D.A., et al., Hospital admissions greater than 30 days following bariatric surgery: patient and procedure matter. Surg Endosc, 2015. 29(6): p. 1310-5.
- Kizy, S., et al., National Trends in Bariatric Surgery 2012-2015: Demographics, Procedure Selection, Readmissions, and Cost. Obes Surg, 2017. 27(11): p. 2933-2939.