The Relationship Between Body Mass Index and Risk of Mortality in Severely Obese Patients Undergoing Bariatric Surgery
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INTRODUCTION

• Prior literature has demonstrated that bariatric surgery is a safe approach for patients who are severely obese. However, the association between body mass index (BMI) and risk of mortality in these patients has not been fully elucidated.
• Primary aim of this study was:
  1. To evaluate the functional relationship between BMI and risk of mortality using data obtained from a national database.
  2. To evaluate potential differences in mortality in super-obese patients (BMI>70) undergoing Roux-en-Y gastric bypass (RNYGB) versus sleeve gastrectomy (SG).

MATERIALS AND METHODS

• Retrospective cohort study
• Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP)
• Severely obese (BMI>40) patients who underwent first-time bariatric surgery between 2015-2018
• Primary outcome variable:
  - Intra-operative death
  - Death within 30 days from procedure
• Generalized linear model used to evaluate the association of BMI with 30-day mortality, by categorizing BMI into quartiles
• Adjustment for age, gender, race, and diabetes mellitus

RESULTS

• 463,436 patients included in the analysis
• Overall 30-day mortality: 0.11%
• Mean BMI 48.2 (SD 7.3) – 1.5% of patients with BMI>70
• Patients in the highest BMI quartile had a significant 3.3-times higher risk of 30-day mortality than patients in the lower quartile (RR 3.3, 95% CI 2.5-4.3).
• Patients with BMI>70 had an even more pronounced 8.6-times higher risk of 30-day mortality (RR 8.6, 95% CI 5.6-13.2).
• Patients with BMI>70 undergoing RNYGB had 2-times higher risk of mortality than patients undergoing SG.

CONCLUSIONS

• Higher BMI is significantly associated with increased risk of 30-day mortality in patients undergoing bariatric surgery.
• This effect is strongly accentuated in super-obese patients with BMI>70, especially those undergoing RNYGB versus SG.