Perioperative Complications in Metabolic and Bariatric Surgery: How Frequent and How Fatal? - An MBSAQIP Study

Daniel Tomey , Bulut, HI., Bistre Varon, J., Zevallos, A., Elzein, S., Castellanos, LD., Abou-Mrad, A., Oviedo, RJ.

Department of Surgery, Houston Methodist Hospital, Houston, TX

No disclosure to report

Background

- Metabolic and bariatric surgery (MBS) is considered one of the safest types of contemporary surgical interventions. However, it has extensively faced criticism and misunderstanding due to the incidence of perioperative complications over decades. This study aims to explore the most current frequency of perioperative complications and their potential impact on 30-day morbidity and mortality by utilizing data from the MBSAQIP database.

Methods – Statistical Analysis

- To investigate the frequency and impact of perioperative complications on postoperative outcomes following MBS, a retrospective analysis was conducted using the MBSAQIP 2015-2018 participant usage file (PUF) database. Chi-square tests and logistic regression tests were performed to determine risk factors of perioperative mortality and morbidity. Statistical significance threshold was taken as P<0.001 due to large sample size.

Results

Figure 1. Perioperative Complications in Metabolic and Bariatric Surgery

Complication	Frequency	Odds Ratio for Mortality	CI 95
Unplanned need for ICU	0.8 %	69.1	59.950-79.588
Deep vein thrombosis*	0.2 %	9.7	5.810- 16.216
Acute Renal Failure	0.1 %	192.7	153.487- 242.032
Need for CPR	0.05 %	1706	1360.6 – 2139.2
Coma	0.002 %	2376	927.6 – 6087.1
Stroke	0.01 %	109.5	58.309 – 205.555
MI	0.03 %	110.0	72.824 – 166.253
Peripheral nerve injury	0.004 %	20.8	2.866 – 151.645
Progressive renal insufficiency	0.7 %	53.6	36.840 – 77.905
Pulmonary Embolism	0.1 %	56.2	42.123 – 74.962
Need for Transfusion	0.8 %	18.8	15.340 – 22.996

Results

- Postoperative 30-day mortality was observed in only 868 out of 760,076 patients (0.1%). Perioperative complications exhibited varying frequencies, ranging from 0.002% to 1.6%. The four most commonly encountered complications within 30 days were reoperation (1.6%), reintervention (1.5%), the need for intensive care unit (ICU) admission (0.8%), and blood transfusion requirement (0.8%). On the other hand, the most fatal complications were coma (OR: 2376; frequency: 0.002%), the need for cardiopulmonary resuscitation (CPR) (OR: 1706; frequency: 0.05%), and the requirement for re-intubation (OR: 228; frequency: 0.2%).

Conclusions

- MBS has demonstrated a higher safety profile compared to various major surgical subspecialities within general surgery with respect to perioperative complications and mortality. However, despite the rarity of certain complications, the implementation of a meticulously designed strategy and a predictive algorithm becomes imperative to effectively address these infrequent occurrences and decrease morbidity and mortality.