# GERD AS AN INDEPENDENT RISK FACTOR FOR ADVERSE OUTCOMES FOLLOWING METABOLIC AND BARIATRIC SURGERY

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## Background

- Gastroesophageal reflux disease (GERD) is prevalent amongst metabolic and bariatric surgery (MBS) patients
- Existing studies suggest GERD may contribute to increased post-operative complications following MBS
- Specific adverse outcomes associated with GERD in different MBS procedures (Roux-en-Y gastric bypass [RYGB] vs. sleeve gastrectomy [SG]) remain unclear

## Objectives

- Primary outcome: Determine whether GERD is an independent risk factor for adverse outcomes following MBS.
- Secondary outcome: Determine procedure-specific complications in RYGB vs. SG patients with preoperative GERD

## Methods

- Retrospective analysis of MBSAQIP (2015-2022)
- 312,080 RYGB & 820,889 SG cases analyzed.
- 117,419 RYGB & 215,570 SG cases propensity-matched based on preoperative GERD status
- Odds Ratios (ORs) calculated to assess 30-day post-operative adverse outcomes
- Propensity matching used to minimize demographic and comorbid confounders

| | RYGB (N = 124,868) | | | Sleeve (N = 216,105) | | |
|---|---|---|---|---|---|---|
| | *% with Comp* | *OR* | *PropOR* | *% with Comp* | *OR* | *PropOR* |
| **ANY COMPLICATION** | 4.9% (n=6141) | 1.35 [1.30, 1.40] | 1.23 [1.18, 1.28] | 2.5% (n=5387) | 1.40 [1.35, 1.45] | 1.21 [1.16, 1.26] |
| **MAJOR COMPLICATION** | 2.5% (n=3075) | 1.38 [1.31, 1.45] | 1.22 [1.15, 1.29] | 1.1% (n=2390) | 1.45 [1.38, 1.52] | 1.18 [1.11, 1.26] |
| **MINOR COMPLICATION** | 3.2% (n=3957) | 1.33 [1.27, 1.38] | 1.22 [1.16, 1.28] | 1.7% (n=3749) | 1.39 [1.33, 1.44] | 1.22 [1.17, 1.28] |
| **RE ADMISSION** | 6.1% (n=7611) | 1.32 [1.28, 1.37] | 1.29 [1.25, 1.34] | 3.2% (n=6882) | 1.33 [1.29, 1.37] | 1.23 [1.19, 1.27] |
| **RE OPERATION** | 2.3% (n=2887) | 1.33 [1.27, 1.40] | 1.26 [1.19, 1.34] | 0.9% (n=1918) | 1.34 [1.27, 1.42] | 1.24 [1.16, 1.33] |
| **RE INTERVENTION** | 2.2% (n=2685) | 1.28 [1.22, 1.35] | 1.29 [1.21, 1.37] | 0.9% (n=1859) | 1.51 [1.42, 1.59] | 1.35 [1.26, 1.45] |
| **ED VISIT** | 11.0% (n=12,271) | 1.19 [1.16, 1.22] | 1.23 [1.19, 1.26] | 7.5% (n=14,401) | 1.19 [1.17, 1.21] | 1.23 [1.20, 1.26] |

## Results

- GERD is an independent risk factor for adverse outcomes following RYGB & SG
- RYGB patients with GERD had higher rates of:
  - Major complications**: Post-op organ/space SSI** (OR 1.23), **unplanned intubation** (OR 1.31), **ICU admission** (OR 1.20), **bowel obstruction** (OR 1.33).
  - Minor complications, readmissions, reoperations, reinterventions, and ED visits
- SG patients with GERD had increased risks for:
  - **Anastomotic/staple leaks** (OR 1.41), **post-op organ/space SSI** (OR 1.39)**, unplanned ICU admission** (OR 1.19)

## Discussion

- Preoperative GERD status is a significant predictor of post-operative complications following MBS.
- RYGB patients with GERD are at higher risk for major complications (e.g., ICU admission, bowel obstruction, intubation).
- SG patients with GERD have a greater risk for staple line leaks and organ/space SSI.

## Conclusion

- GERD is a statistically significant, independent risk factor for post-MBS complications.
- **Impact of preoperative GERD on post operative complications differs by procedure type**:
  - RYGB patients → Higher major complications: (ICU admissions, bowel obstruction).
  - SG patients → Higher risk for staple line leaks & organ space infections.
- Future Research Needed: Investigate preoperative GERD management strategies to optimize patient outcomes