

Introduction

- Bariatric surgery is the only therapeutic modality proven to produce long-term weight loss and reduce associated comorbidity in morbidly obese patients[1]
- Preoperative diabetes mellitus (DM) is a well-known risk factor for poor outcomes following general surgical procedures
- The number of such procedures performed each year in this cohort has been rising

Objective

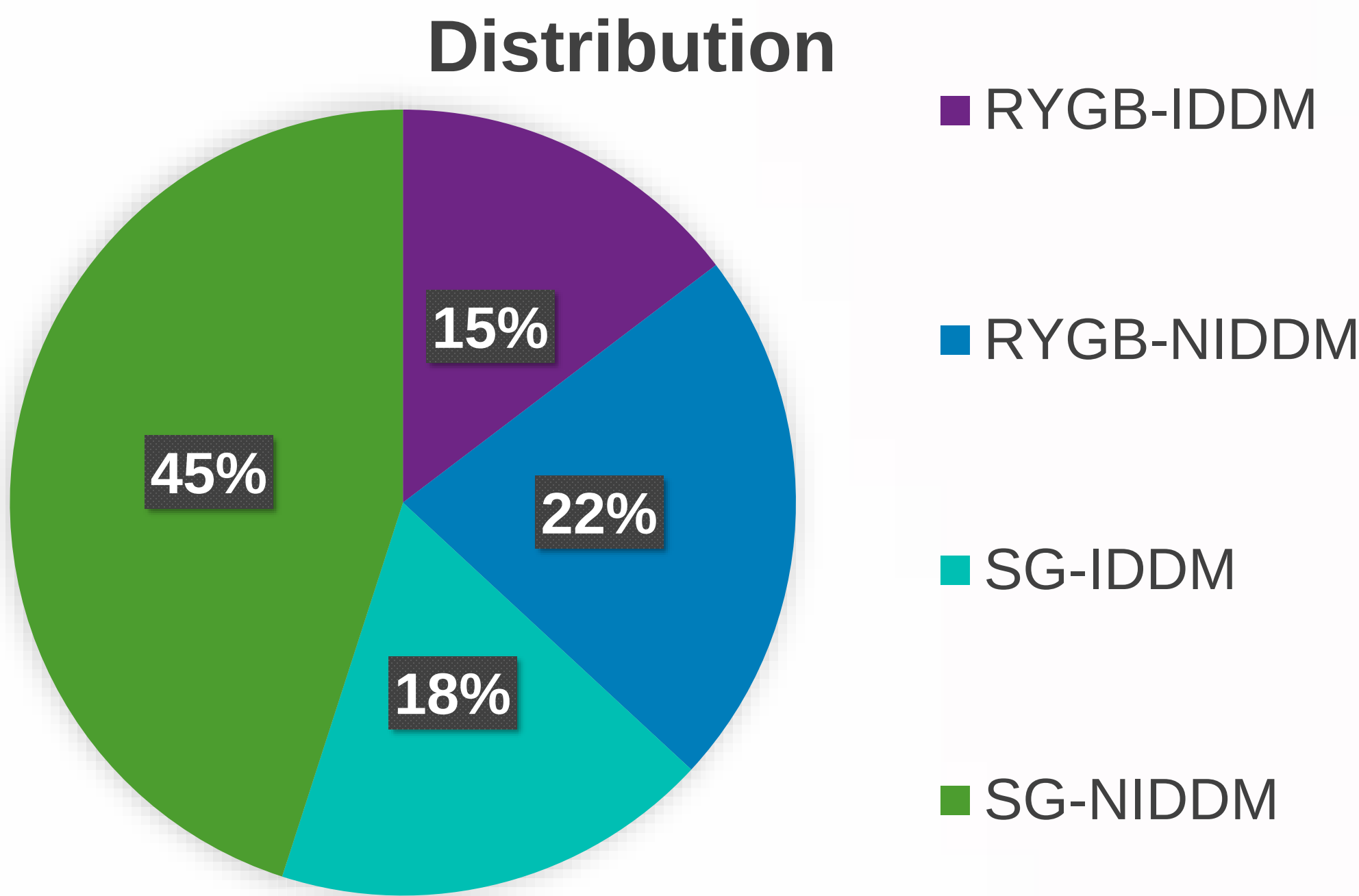
To investigate the impact of preoperative diabetes mellitus on postoperative outcomes following minimally invasive sleeve gastrectomy and gastric bypass procedures

Methods

- Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) database 2015-17[2]
- CPT codes used to identify patients undergoing laparoscopic sleeve gastrectomy (SG) and laparoscopic Roux-en-Y gastric bypass (RYGB)
- Patients with diabetes were then grouped based on the type of surgery and classified further as:
 - Patients with Non-Insulin Dependent Diabetes Mellitus (NIDDM)
 - Patients with Insulin Dependent Diabetes Mellitus (IDDM)
- Thirty day postoperative outcomes were compared among the groups
- Statistical analyses performed using STATA ver.14[3]
- Chi-square test used for comparison of categorical variables and ANOVA for continuous variables
- Multivariate analysis was performed for all factors significant on univariate analysis

Results

116,090 patients included



Specific Post-operative Complications

Variable	RYGB-IDDM	RYGB-NIDDM	SG-IDDM
Superficial SSI	4.51(3.62-5.63)*	2.79(2.25-3.46)*	1.34(1.01-1.77)*
Deep SSI	3.99(2.29-6.98)*	3.52(2.09-5.95)*	1.45(0.71-2.97)
Organ space SSI	1.73(1.25-2.40)*	1.49(1.1-2.03)*	1.16(0.8-1.68)
Pneumonia	2.02(1.48-2.75)*	1.98(1.48-2.64)*	1.39(0.99-1.93)
C.difficile infection	2.83(1.58-5.07)*	1.67(0.93-2.98)	2.83(1.66-4.84)*
UTI	1.59(1.23-2.04)*	1.15(0.90-1.47)	1.31(1.01-1.7)*
Prolonged ventilator requirement	2.41(1.5-3.87)*	1.98(1.24-3.17)*	1.77(1.08-2.9)*
Transfusion	2.08(1.74-2.49)*	1.98(1.68-2.33)*	1.34(1.11-1.61)*
Sepsis	1.88(1.18-3.01)*	1.54(0.98-2.4)*	1.63(1.00-2.64)*
Renal failure	2.17(1.37-3.42)*	1.63(1.03-2.59)*	1.99(1.28-3.10)*

* Statistically significant

Thirty Day Outcomes

Variable	RYGB-IDDM	RYGB-NIDDM	SG-IDDM
30-Day Mortality	1.84(1.22-2.77)*	1.26(0.82-1.93)	1.34(0.88-2.03)
30-Day Morbidity	2.19(2.00-2.39)*	1.64(1.5-1.78)*	1.56(1.42-1.71)*
30-Day Readmission	2.03(1.87-2.21)*	1.60(1.48-1.73)*	1.71(1.58-1.86)*
30-Day Reoperation	1.96(1.7-2.26)*	1.95(1.71-2.21)*	1.25(1.08-1.46)*

* Statistically significant

Conclusions

- Patients with insulin dependent diabetes mellitus undergoing a laparoscopic gastric bypass are at a significantly elevated risk of overall 30-day mortality
- Emphasis on adequate preoperative counseling about the suggested risks and medical optimization in these patients prior to elective gastric bypass.
- Early index of suspicion for the significantly elevated postoperative complications in the above cohort

Limitations

Unclear nature of control and severity of Diabetes Mellitus

- Home insulin dose
- Type of antidiabetic treatment
- Preoperative HbA1c

References

- [1] Felsenreich DM, Langer FB, Prager G. Weight Loss and Resolution of Comorbidities After Sleeve Gastrectomy: A Review of Long-Term Results. Scand J Surg. 2018 Sep.
- [2] MBSAQIP database. Accessed from <https://www.facs.org/quality-programs/mbsaqip/participant-use>
- [3]STATA v14 available from <https://www.stata.com>