

Long-term survival after sleeve gastrectomy versus gastric bypass

Speaker: Dag Holmberg

Department of Molecular Medicine and Surgery, Karolinska Institutet and
Karolinska University Hospital, Stockholm, Sweden

SWE-REG Conference

October 28, 2021

Co-authors: Santoni G, Kauppila JH, Markar SR, Lagergren J

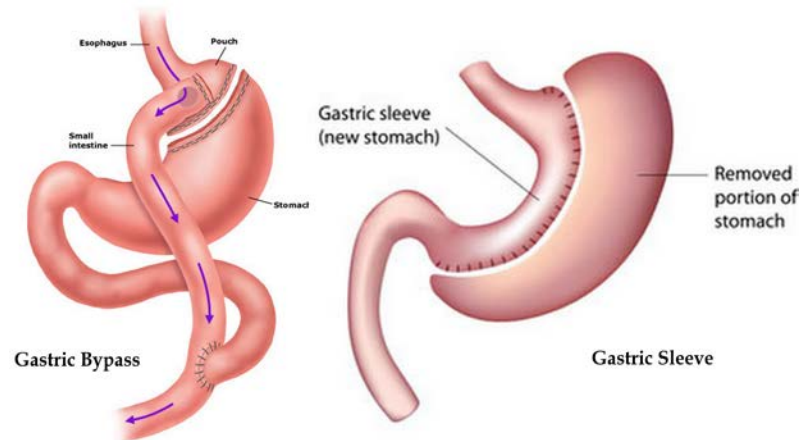
Background

- 30% of adults in Western countries are obese (BMI >30)
- Obesity is associated with increased risk of
 - Cardiovascular disease
 - Diabetes
 - Cancer
 - Psychiatric disease
 - Death

Background

- Bariatric surgery leads to substantial weight loss within 6 months
- Resolves obesity-related comorbidities
- Increases life expectancy

- Two dominating procedures
 - Gastric bypass
 - Sleeve gastrectomy



Background

- Sleeve gastrectomy produces slightly less weight loss and resolution of comorbidities but is associated with less adverse events.
- Have not been compared regarding long-term survival.
- This study aimed to compare all-cause mortality following sleeve gastrectomy and gastric bypass.

Study Design

- Population-based cohort study based on national registries in Sweden and Finland
- Included all patients operated with laparoscopic sleeve gastrectomy or gastric bypass between January 1, 2007 and December 31, 2019 with complete follow-up until December 31, 2020.
- Exclusion criteria
 - Age <18 years
 - Previous bariatric surgery

Study Design

- Primary outcome
 - Death from any cause as identified in the national cause of death registries.
- Statistical analysis
 - Cox regression provided hazard ratios with 95% confidence intervals
 - Main model adjusted for sex, age, diabetes, hypertension, other comorbidities (Charlson comorbidity index score), calendar year, country.

Results – Table 1

	Sleeve gastrectomy	Gastric bypass
Total	9,612 (16%)	51,891 (84%)
Female sex	7,336 (76%)	39,017 (75%)
Median age	43	42
Diabetes	1,486 (16%)	9,117 (18%)
Other comorbidity	2,662 (28%)	15,606 (30%)
Median person-years of follow-up (IQR)	3.7 (2.2-5.3)	7.7 (5.0-9.7)
Deaths	122 (1.3%)	1,449 (2.8%)

Results

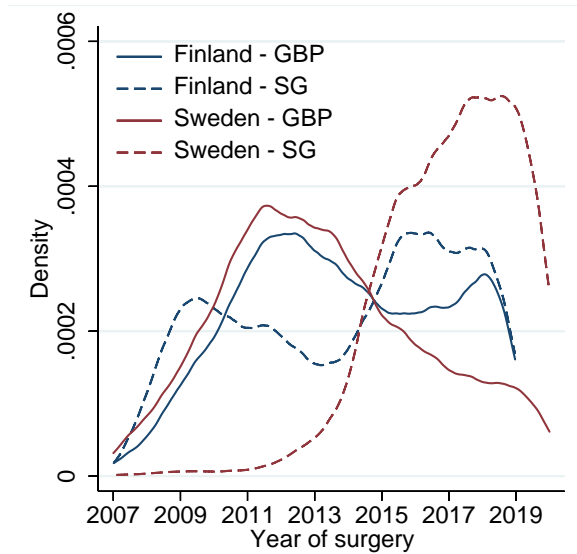


Fig 1. Distribution of surgery by country over the study period.

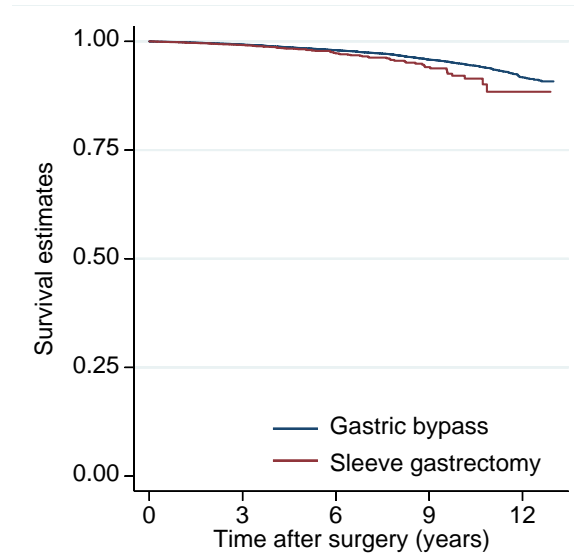


Fig 2. K-M survival estimates for all-cause survival.

Results – Table 2

	Person-years	Deaths (n)	aHR (95% CI)
Overall			
Gastric bypass	377,477	1,449	1.00 (Reference)
Sleeve gastrectomy	38,235	122	0.98 (0.81-1.20)

Results – Table 2, cont'd.

	Person-years	Deaths	aHR (95% CI)
No diabetes			
Gastric bypass	314,342	981	1.00 (Reference)
Sleeve gastrectomy	31,873	66	0.82 (0.63-1.06)
Diabetes			
Gastric bypass	63,135	468	1.00 (Reference)
Sleeve gastrectomy	6,362	56	1.26 (0.95-1.68)
Interaction term			1.54 (1.06-2.24)

Results – Table 2, cont'd.

	Person-years	Deaths	aHR (95% CI)
Calendar year <2014			
Gastric bypass	296,630	1,212	1.00 (Reference)
Sleeve gastrectomy	9,144	68	1.25 (0.96-1.63)
Calendar year ≥2014			
Gastric bypass	80,847	237	1.00 (Reference)
Sleeve gastrectomy	29,091	54	0.72 (0.54-0.97)
Interaction term			0.58 (0.39-0.86)

Conclusion

- Sleeve gastrectomy equally effective as gastric bypass in preventing death
 - In the more recent calendar period, it was superior to gastric bypass.
 - Validates the use of sleeve gastrectomy as a bariatric surgery method.
- Diabetes interacted with type of surgery and mortality and could aid the choice of surgery to maximize life expectancy
 - Sleeve gastrectomy for patients without diabetes
 - Gastric bypass for patients with diabetes

Thank you