



Risk Factors for Suicide After Bariatric Surgery in a Population-based Nationwide ~~Study in Five Nordic Countries~~

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Background

- Bariatric surgery is known for the effective treatment outcomes for morbid obesity: persistent weight loss, obesity-related comorbidities, improved quality of life
- However, a concern is overall increased risk of suicide compared to control groups
- Risk factors for this were unclear in prior studies
- Difficult to assess high risk individuals to provide additional support





Objective

Aim of this paper was to identify risk factors for suicide after bariatric surgery



Methods

- Population-based cohort study
 - 33 year period (1980-2012)
 - 5 Nordic countries (Denmark, Finland, Iceland, Norway, Sweden)
 - Unique database Nordic Obesity Surgery Cohort
- Inclusion criteria: obesity diagnosis + bariatric surgery code
 - Sex, age, comorbidities, type of bariatric surgery (bypass vs other surgery besides bypass), surgical approach (open v lap), year of surgery, history of depression or anxiety, history of psychosis/schizophrenia/mania/bipolar, history of personality disorder, history of substance abuse, previously documented psychiatric diagnoses
- Outcome – suicide after bariatric surgery (based on diagnosis codes in death registries)
- Stats – multivariable analysis w/ multivariable Cox regression for hazard ratios

Background



Results

- 49,977 patients
 - 74.5% female, 41.6 years avg, minimal comorbidities preop
 - 73.4% bypass, 72.8% laparoscopic
- 98 pts committed suicide (0.2%)
 - More often men, non-bypass operation, and had a hx of psychiatric comorbidities
 - Preop substance abuse w moderate increased risk
 - Higher number of psychiatric diagnoses associated with higher risk

TABLE 2. Risk of Suicide After Bariatric Surgery, Presented as HRs With 95% CIs

Variable	Number (%)	Crude HR (95% CI)	Adjusted HR* (95% CI)
Sex			
Male	34 (34.7)	1.00 (Reference)	1.00 (Reference)
Female	64 (63.3)	0.54 (0.36–0.82)	0.48 (0.33–0.77)
Age			
<30	18 (18.4)	1.00 (Reference)	1.00 (Reference)
30–39	29 (29.6)	1.06 (0.59–1.91)	0.97 (0.52–1.71)
40–49	26 (26.5)	0.97 (0.53–1.78)	0.88 (0.47–1.59)
≥50	25 (25.5)	1.53 (0.83–2.82)	1.45 (0.75–2.60)
Calendar year			
<2000	53 (54.1)	1.00 (Reference)	1.00 (Reference)
2000–2009	34 (34.7)	1.72 (0.99–3.01)	1.06 (0.50–2.23)
≥2010	11 (11.2)	2.04 (1.10–3.76)	1.50 (0.51–5.00)
Bariatric surgery type			
Gastric bypass	48 (49.0)	1.00 (Reference)	1.00 (Reference)
Other	50 (51.0)	0.42 (0.26–0.67)	0.44 (0.27–0.99)
Surgical approach			
Open	32 (32.7)	1.00 (Reference)	1.00 (Reference)
Laparoscopic	66 (67.3)	1.15 (0.69–1.91)	0.69 (0.36–1.29)
Charlson comorbidity index			
0	93 (94.9)	1.00 (Reference)	1.00 (Reference)
≥1	5 (5.1)	1.44 (0.58–3.56)	0.97 (0.41–2.55)
Depression or anxiety			
No	70 (71.4)	1.00 (Reference)	1.00 (Reference)
Yes	28 (28.6)	9.13 (5.81–14.36)	6.87 (3.97–11.90)
Mania, bipolar disorder, psychosis, or schizophrenia			
No	91 (92.9)	1.00 (Reference)	1.00 (Reference)
Yes	7 (7.1)	10.76 (4.98–23.26)	2.70 (1.14–6.37)
Personality disorder			
No	89 (90.8)	1.00 (Reference)	1.00 (Reference)
Yes	9 (9.2)	13.41 (6.73–26.72)	2.26 (0.98–5.20)
Substance use			
No	88 (89.8)	1.00 (Reference)	1.00 (Reference)
Yes	10 (10.2)	7.62 (3.96–14.68)	2.28 (1.08–4.80)
Number of psychiatric diagnoses[†]			
0	66 (67.3)	1.00 (Reference)	1.00 (Reference)
1	15 (15.3)	4.75 (2.69–8.39)	5.20 (2.91–9.28)
≥2	17 (17.3)	21.10 (12.31–36.17)	22.59 (12.96–39.38)

*Adjusted for sex, age, calendar year, surgery type, surgical approach, Charlson comorbidity index, and type of psychiatric diagnosis.

†Not adjusted for type of psychiatric diagnosis.



Discussion

- Excess risk of suicide after bariatric surgery occurs in patients with psychiatric conditions before surgery, esp in pts with hx depression and anxiety
- Precipitating underlying psychiatric vulnerability, unrealistic expectations, lifestyle change
- Strong results due to well maintained database and homogenous data
- Clinical implications on patients with prior psychiatric conditions
- Consider postoperative psychiatric surveillance

Background



Thank you. Questions?

