

Sex-specific differences in patients deceased after bariatric surgery: a retrospective, registry analysis

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Background and aims: Bariatric surgery is an effective treatment strategy for patients with obesity. The majority of patients undergoing bariatric surgery are female. Motivation and reasons for bariatric surgery are different in men and women. Thus, the aim of this study was to analyze sex-specific differences with emphasis on patients deceased with a history of bariatric surgery in a large, registry analysis.

Materials and methods: The Austrian health insurance provides service for about 99% of all Austrian inhabitants. Data from inpatient and outpatient services comprising reimbursed drug prescriptions based on Anatomical Therapeutic Chemical (ATC) codes, medical diagnoses based on International Classification of Diseases (ICD) and medical procedures as MEL (medical single procedure) were available. Overall, 19 901 patients with a history of bariatric surgery ((HF220 (Sleeve Gastrectomy - open), HF230 (Sleeve Gastrectomy - laparoscopic), HF240 (Gastric Bypass - open), HF250 (Gastric Bypass - laparoscopic), HF254 (Biliopancreatic Diversion - open), HF255 (Biliopancreatic diversion - laparoscopic), HF260 (Gastric banding - open) and HF270 (Gastric banding - laparoscopic)) from January 2010 to December 2018 with 107 806 patient years of observation were included. In deceased patients, comorbidities of patients were analyzed based on ICD-codes and ATC-codes. Comorbidities associated with obesity were categorized in 4 groups: Diabetes mellitus (DM), cardiovascular diseases (CV), psychiatric disorders (PSY) and malignancies (M).

Results: The mean age at operation of all was 40.6 ± 12.5 years (men: 41.8 ± 12.6 , women: 40.1 ± 12.4 ; $p=0.000$). Within the observation period from January 2010 to April 2020, 367 (1.8%) patients deceased. The mean follow-up of the total cohort was 5.4 ± 2.6 years. The total rate of mortality per year of observation was 0.34%. The sex-specific rate of mortality was 2.7-fold higher in men compared to women (0.64% vs. 0.24%). The 30-days mortality was 0.2% and five-fold higher in men compared to women (0.5% vs. 0.1%, $p < 0.001$). In both men and women, cardiovascular comorbidities (48%, men: 53%, women: 44%, $p = 0.09$) and psychiatric disorders (47%, men: 44%, women: 50%, $p = 0.212$) were the most common comorbidities. Diabetes and malignant diseases were identified in 36% (men: 41%, women: 32%, $p = 0.07$) and 33% (men: 29%, women: 36%, $p = 0.145$), respectively.

Conclusion: This analysis demonstrates a five-fold higher 30-days mortality in men compared to women after bariatric surgery. The long-term mortality was also higher in men. Cardiovascular comorbidities and psychiatric disorders are independently of sex, frequently observed comorbidities in this special cohort.

Disclosure: **H. Beiglböck:** None.