Background

Obesity is associated with increased mortality in numerous diseases. Bariatric surgery has shown to prevent obesity related mortality and morbidity. However, there is a lack of population-based prospective studies examining overall mortality in patients who undergo gastric bypass.

Aim

The objective of this study was to assess overall mortality in obese individuals undergoing bariatric surgery compared to nonsurgical obese patients.

Material and methods

From the Swedish Patient registry, a person-based register of all hospitalizations and hospital-based outpatients’ visits in Sweden, we created a cohort including all patients with a principal diagnosis of obesity in Sweden from 2000 until 2011. The study population comprised 48,693 patients 18-74 years old of whom 22,581 underwent bariatric surgery (gastric bypass 92.8%) while there were 26,112 nonsurgical obese patients.

Results

The mortality rate was higher in the non-surgical group (4.21%) compared to the surgical group (1.11%) (7.7 vs. 2.1 deaths per 1000 person-years). Mean follow-up time for the surgical group was 5.48 years (95% confidence interval (CI) 5.33-5.41) and 5.37 (95% CI 5.44-5.53) for the non-surgical group. The overall mortality decreased by 57% in the surgery group (age adjusted hazard ratio 0.43, 95% CI 0.37-0.50) compared with the non-surgical group (Table 1). After adjusting for prognostic factors (sex, coronary heart disease, valve disease, malignancy, hypertension, diabetes, heart failure, stroke, and atrial fibrillation) the results persisted.

The most common cause of death in the non-surgical group was cardiovascular disease, followed by cancer (Figure 1). In the surgical obese patients the most common cause of death was external causes of mortality (such as accidents and suicide), followed by cardiovascular disease and cancer. Although accidents and suicide were the main causes of death in the surgical group, the incidence of death from these causes was still lower than in the non-surgical group.

Table 1. Hazard ratio for risk of death

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<th>Model 1*</th>
<th>Model 2**</th>
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<tr>
<td>Non-operation</td>
<td>Hazard ratio (95% CI)</td>
<td>Hazard ratio (95% CI)</td>
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<td>Operation</td>
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|                  | 0.43 (0.37-0.50) | 0.43 (0.38-0.50) | * Age adjusted  
** Adjusted for age, sex, CHD, hypertension, diabetes, heart failure, malignancy, AMI, stroke, and valve disease |  

Conclusion

This population-based cohort study indicates that the overall all-cause mortality is considerably lower among obese individuals who undergo bariatric surgery compared to nonsurgical obese individuals.