



## Original article

# Safety of metabolic and bariatric surgery in obese patients with liver cirrhosis: a systematic review and meta-analysis

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**Abstract**

**Background:** With the pandemic of obesity and the growing experience in metabolic and bariatric surgery (MBS), the number of patients with obesity and liver cirrhosis undergoing MBS is increasing.

**Objective:** To analyze the morbidity and mortality following MBS in patients with obesity and liver cirrhosis.

**Setting:** Systematic review and meta-analysis.

**Methods:** The published literature was systematically reviewed, in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, for studies reporting outcomes of MBS among patients with liver cirrhosis. The predetermined endpoints were the overall complication after MBS, intraoperative complications, liver-related complications after MBS, all-cause 90-day mortality after MBS, and liver-related mortality post-MBS. The pooled weighted proportions for each of the endpoints was calculated using random effect meta-analysis.

**Results:** A total of 18 studies, including 471 patients with obesity and liver cirrhosis undergoing MBS, qualified for the final quantitative analysis. The mean age and mean body mass index (BMI) of the pooled patient cohort were 50.2 years and 47.2 kg/m<sup>2</sup>. The pooled weighted proportions of the overall post-MBS complications, intraoperative complications, liver-related complications, overall 90-day mortality, and liver failure related mortality post MBS were 22.14% (CI<sub>95%</sub>: 15.43%–29.55%), .08% (CI<sub>95%</sub>: 0%–1.02%), 4.62% (CI<sub>95%</sub>: 1.27%–9.30%), 0% (CI<sub>95%</sub>: 0%–.44%), .08% (CI<sub>95%</sub>: 0%–1.03%), respectively. Significantly lower postoperative complications were noted with sleeve gastrectomy (10.08% [95%CI: 5.14%–16%]) compared with Roux-en-Y gastric bypass (31.53% [95%CI: 18.62%–45.68%]; *P* = .02).

**Conclusion:** We found an overall low postoperative surgical and liver-related mortality post MBS among patients with obesity and liver cirrhosis. The overall postoperative complications and liver-related complications were higher among patients with liver cirrhosis than in noncirrhotic patients. Sleeve gastrectomy showed lower postoperative complications compared with Roux-en-Y gastric bypass. (Surg Obes Relat Dis 2020; ■:1–13.) © 2020 American Society for Bariatric Surgery. Published by Elsevier Inc. All rights reserved.

**Keywords:**

Obesity; Chronic liver disease; Liver decompensation; Sleeve gastrectomy; Roux-en-Y gastric bypass; Complications

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