

Title: Maternal, fetal and infant outcomes associated with bariatric surgery: a population-based, matched cohort study

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Background: Obesity during pregnancy is associated with a range of adverse pregnancy outcomes. Bariatric surgery is the most effective treatment for weight loss but how bariatric surgery impacts pregnancy outcomes remains poorly understood.

Methods: This was a retrospective, population-based, matched cohort study utilising data from multicentre, province-wide, linked administrative databases in Ontario to examine associations between bariatric surgery and maternal, fetal and infant outcomes. Patients included individuals with obesity who underwent bariatric surgery and subsequently became pregnant from July 2011 to September 2017 matched to non-surgical pregnant patients with obesity. The primary outcomes of interest were incidence of gestational diabetes, preeclampsia/HELLP syndrome, stillbirth/neonatal death, small-for-gestational-age, large-for-gestational-age, and a composite of severe fetal/infant morbidity/mortality. Several secondary outcomes were also evaluated. Outcomes were evaluated through multivariable regression.

Results: We identified and matched 680 post-surgical individuals who subsequently became pregnant to 2002 non-surgical pregnant individuals with obesity. A lower observed incidence of gestational diabetes was seen in the surgical vs. non-surgical group (OR 0.29, 95%CI 0.21-0.40 p<0.001). Similar differences were observed in the odds of preeclampsia/HELLP between groups (OR 0.20, 95%CI 0.13-0.31 p<0.001). Bariatric surgery impacted neonatal

size, with differences observed in both SGA (OR 2.74, 95%CI 0.2.04-3.70 p<0.001) and LGA (OR 0.25, 95%CI 0.18-0.36, p<0.001) There were no observed associations between bariatric surgery and severe adverse fetal/infant outcomes. Composite severe fetal/infant morbidity/mortality was lower in the surgical vs. non-surgical group (OR 0.73, 95% CI 0.54-0.97).

Conclusion: Bariatric surgery was associated with a reduction in the risk of several obesity related adverse pregnancy outcomes.

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