

ASO Best Abstract Award



Zainab Akhter is a final year PhD student in the Maternal and Perinatal Research Team at the Institute of Health & Society, Newcastle University. She started her epidemiology-based PhD in 2016 after completing her undergraduate degree in Genetics. Her research interests include maternal obesity and bariatric surgery in women of reproductive age and associations with adverse perinatal outcomes in a subsequent pregnancy. She is particularly interested in investigating congenital anomalies in pregnancy after bariatric surgery due to the link with nutrition. Alongside her studies, She has worked in a student support role, arranging training opportunities and an annual conference for PhD students in the Institute of Health & Society.

Investigating the association between pregnancy following bariatric surgery and adverse perinatal outcomes: A systematic review and meta-analysis.

Zainab Akhter¹, Judith Rankin¹, Rute Vieira¹, Lem Ngongalah¹, Dries Ceulemans², Roland Devlieger², Roger Ackroyd³, Nicola Heslehurst¹

¹Institute of Health & Society, Newcastle University, Newcastle upon Tyne, United Kingdom. ²UZ Leuven, Leuven, Belgium. ³Northern General Hospital, Sheffield, United Kingdom

Maternal obesity is associated with adverse outcomes for both mother and baby. Bariatric surgery prior to pregnancy reduces the risk of health complications for the mother but there is limited evidence of the impact of bariatric surgery on perinatal outcomes. Bariatric surgery can cause nutritional deficiencies which may impair fetal development. This systematic review investigated the association between pregnancy after bariatric surgery and adverse perinatal outcomes.

Six databases were searched up to February 2018 and supplemented by hand-searching relevant journals. Reference lists and citations of included studies were screened. Observational studies published in English language reporting perinatal outcomes after bariatric surgery compared to pre-pregnancy obesity or BMI-matched controls were included. The primary outcomes were congenital anomalies and perinatal mortality. PROSPERO registration: CRD42017051537.

Nineteen studies with 8,206 pregnancies after bariatric surgery and 206,413 controls were included. Meta-analysis identified significantly increased odds of perinatal mortality after bariatric surgery (OR 1.57 95% CI 1.16-2.13). There were too few cases of congenital anomalies to calculate statistical significance. Meta-analysis also identified significant associations with SGA infants (OR 2.28 95% CI 2.05-2.55) and preterm birth (OR 1.28 95% CI 1.07-1.53). Narrative summary suggests reduced risks of macrosomia, large-for-gestational-age (LGA) infants, and post-term birth.

Bariatric surgery prior to pregnancy is significantly associated with an increased risk of perinatal mortality, SGA infants, and preterm birth. The risk of macrosomia, LGA infants, and post-term birth may be decreased after bariatric surgery. Larger scale studies of national and international data are required to overcome sample size limitations for rare outcomes.