



Pregnancy and neonatal outcomes after bariatric surgery in the United Arab Emirates

Dr. Sadia Solaiman , Dr. Omaema Baghdadi, Dr Hassan Elbiss, Dr Shabana Kapadia, Dr Thin Thin Hla , Department of Obstetrics and Gynaecology

Tawam Hospital, Al Ain , Abu Dhabi , UAE

BACKGROUND

Obesity in women, a global issue, is being widely managed with bariatric surgery worldwide.Women are generally advised not to conceive for 12 to 18 or 24 months following bariatric surgery . Fertility is improved after bariatric surgery through the restoration of ovulation so timing of conception after bariatric surgery becomes a key clinical issue. Numerous studies have looked at the outcomes of pregnancies following bariatric procedures. They have examined the pregnancy trajectory and neonatal outcomes in women who conceived at various intervals following bariatric surgery, but the results were frequently constrained by study design and sample size related issues. Importantly, the effects of gestational weight gain have not been fully examined. Given this background, the objective of our study was to assess pregnancy outcomes for both mother and neonate based on the time from surgery to conception and compliance with the guidelines for gestational weight gain.

OBJECTIVE

We assessed if surgery-to-conception time has a relation with pregnancy outcomes taking into account gestational weight gain.

METHODS

A cohort study between 2015 and 2019 followed-up pregnancies after various types of bariatric surgeries performed (e.g. Roux-en-Y gastric bypass, sleeve gastrectomy, gastric banding, gastric bypass with Roux-en-Y gastroenterostomy) in Tawam hospital, Al Ain, United Arab Emirates. There were five surgery-to-conception groups: <6 months, 6-12 months, 13-18 months, 19-24 months, and >24 months. There were three gestational weight gain groups: inadequate, adequate, or excessive (based on the National Academy of Medicine classification). In addition to surgery-to-conception interval and gestational weight gain, the primary outcome variables included gestational age at delivery, preterm birth, birth weight, and IUGR. Preterm birth was defined as occurring before 37 weeks of pregnancy. Pregnancy-related complications such as preeclampsia (hypertension and proteinuria), gestational diabetes mellitus (new-onset, diagnosed by glucose monitoring), pregnancy induced hypertension (new-onset, above 140/90 mmHg at two occasions), and postpartum hemorrhage (postpartum bleeding of more than 1000 ml) were also investigated. Maternal and neonatal outcomes were compared using analysis of variance and chi-square tests.

Table 3 Pregnancy outcomes according to time from surgery to conception.

Characteristics	Time period					p- value
	<6	7-12	13-18	19-24	>24	
	months (n=22)	months (n=47)	months (n=29)	months (n=14)	months (n=46)	
Maternal Outcomes						
Gestational age (weeks)	38.27 ± 1.07	38.13 ± 1.92	37.55 ± 1.48	37.93 ± 1.14	37.82 ± 2.15	0.54
Gestational weight gain (kg)	-9.29 ± 14.24	3.14 ± 7.23	6.44 ± 9.44	9.73 ± 6.15	8.44 ± 6.85	0.001
Delivery Weight (kg)	77.61 ± 8.21	79.49 ± 15.91	82.01 ± 16.54	75.30 ± 16.79	80.55 ± 14.14	0.81
Preterm birth (<37 weeks)	2 (9.1)	9 (19.1)	8 (27.6)	1 (7.1)	10 (21.7)	0.42
Weight gain according to the National Academy of Medicine recommendations						0.002**
Inadequate	20 (90.9)	32 (68.1)	13 (44.8)	6 (42.9)	21 (45.6)	
Adequate	1 (4.5)	12 (25.5)	10 (34.5)	3 (21.4)	16 (34.8)	
Excessive	1 (4.5)	3 ((6.4)	6 (20.7)	5 (35.7)	9 (19.6)	
Maternal Complications						
Gestational diabetes	5 (22.7)	7 (14.9)	2 (6.9)	2 (14.3)	5 (10.9)	0.52
Pregnancy-induced hypertension	0	0	0	0	1 (2.2)	0.65
Post-partum hemorrhage	1 (4.5)	0	1 (3.4)	0	1 (2.2)	0.67
Neonatal Outcomes						
Intrauterine growth restriction (based on ultrasound estimated fetal weight)	4 (18.2)	9 (19.1)	5 (17.2)	3 (21.4)	11 (23.9)	0.95
Birth weight (kg)	2.91 ± 0.47	2.74 ± 0.66	2.71 ± 0.41*	2.86 ± 0.37	2.77 ± 0.49	0.36
Admission to Neonatal Intensive Care Unit	2 (9.1)	9 (19.1)	6 (20.7)	3 (21.4)	8 (17.4)	0.75

Data are presented as mean ± SD or frequencies (percentages)
*Intrauterine fetal demise (n=1); ** Calculated by chi-square test

RESULTS

There were 158 pregnancies. Booking maternal body mass index (BMI) and weight were higher among mothers who conceived <6 months following surgery (p<0.001). Gestational weight gain was not related to the type of bariatric surgery (p=0.24), but it was far more often inadequate in mothers who conceived <12 months following surgery (p=0.002). Maternal (including pregnancy induced hypertension and gestational diabetes mellitus) and neonatal outcomes were not statistically significantly associated with surgery-to-conception duration. However, birthweight was lower when gestational weight gain was inadequate (p=0.03).

CONCLUSION

There is a negative relationship between shorter bariatric surgery-to-conception interval and gestational weight gain, a feature related to neonatal birth weight. Conception should be delayed to improve pregnancy outcomes following bariatric surgery.