

## INTRODUCTION

Emergency Caesarean section (CS) in women with twin pregnancy who planned to vaginally delivery, carries high maternal and perinatal morality. The risks are much higher if the second twin needs an emergency CS after delivery of first twin. The incidence of CS for second twin for a planned vaginal delivery varies in the literature from 4.2-16.9%.<sup>1-2</sup> Previously identified risk factors for mixed delivery include non-vertex deliveries, delivery intervals of over 30 minutes, prematurity and nulliparity.<sup>4</sup>

## AIM

To analyse the factors which could lead to second twin being delivered by CS (study group) compared to both twins delivered vaginally (control group).

## METHODS

This is a retrospective cohort study of twin deliveries, where T1 was delivered vaginally, at an Australian tertiary obstetric hospital between 2008-2017. Exclusion criteria included extreme prematurity, intrauterine foetal death, feticide, and twin-twin transfusion.

## RESULTS

- 18 study group, 169 control
- 9.63% T2 delivered by CS
- 55.5% nulliparous in study group unlike control (39.6%)
- Average interval between delivery in study 52 minutes 30 seconds and 19 minutes 40 seconds in control
- Syntocinon before delivery occurred in 50% of study group and 53.8% control group

## DEMOGRAPHICS n(%)

		Study	Control
Maternal Age	18-24	4 (22.2)	28 (16.6)
	25-34	7 (38.9)	110 (65.1)
	>35	7 (38.9)	31 (18.3)
Parity	P0	10 (55.6)	67 (39.6)
	P1-4	8 (44.4)	98 (58.0)
	P>5	0 (0)	4 (2.37)
Twin Type	DCDA	16 (88.9)	127 (75.1)
	MCDA	1 (5.6)	39 (23.1)
	Unknown	1 (5.6)	3 (1.8)
BMI	<18.5	1 (5.6)	9 (5.3)
	18.5-24.9	12 (66.7)	82 (48.5)
	25-29.9	3 (1.7)	38 (48.5)
	30-39.9	2 (1.1)	25 (14.8)
	>39.9	0 (0)	2 (1.2)
	Unknown	0 (0)	13 (7.7)

## ANTEPARTUM FACTORS n(%)

		Study	Control
DM	GDM	0 (0)	25 (14.8)
	Nil	18 (100)	154 (91.1)
HTN	Essential	0 (0)	1 (0.06)
	Gestational	2 (1.1)	5 (3.0)
	PET	1 (5.6)	19 (11.2)
	Nil	15 (83.3)	154 (91.1)

## INTRAPARTUM FACTORS n(%)

		Study	Control
Onset of Labour	Spontaneous	8 (44.4)	39 (23.1)
	Spontaneous, augmented	6 (33.3)	61 (36.1)
	IOL	5 (27.8)	69 (40.1)
Presentation at Delivery	Cephalic	7 (38.9)	125 (74.0)
	Breech	6 (33.3)	40 (23.7)
	Transverse/Shoulder	4 (22.2)	1 (0.6)
	Compound	0 (0)	3 (1.8)
	Unknown	1 (5.6)	0 (0)
Minutes between T1-T2	0-15	2 (1.1)	84 (49.7)
	16-30	5 (27.8)	63 (37.3)
	31-45	5 (27.8)	11 (6.5)
	46-60	3 (16.7)	8 (4.7)
	>60	5 (27.8)	3 (1.8)

## CONCLUSION

- Comparable T2 CS rate (9.63%) to previous literature (9.45%)<sup>1</sup>
- A higher proportion of women had mixed deliveries if they had a normal BMI, spontaneously laboured, had a non-vertex delivery or had over 30 minutes between T1 and T2.
- The multifactorial nature of twin delivery suggests that this should be further investigated in a prospective multi-centre trial.

## REFERENCES

1. Wen SW, Fung KF, Oppenheimer L, Demissie K, Yang Q, Walker M (2004) Occurrence and predictors of cesarean delivery for the second twin after vaginal delivery of the first twin. *Obstet Gynecol* 103(3):413-419
2. Barrett JF, Hannah ME, Hutton EK, et al. A randomized trial of planned cesarean or vaginal delivery for twin pregnancy. *N Engl J Med*. 2013;369(14):1295-305.
3. Suzuki S (2009) Risk factors for the emergency caesarean delivery of the second twin after vaginal delivery of the first twin. *J Obstetrics and Gynaecol* 35(3).