

Classical versus low transverse caesarean sections: maternal and neonatal complications after extremely preterm and very preterm births

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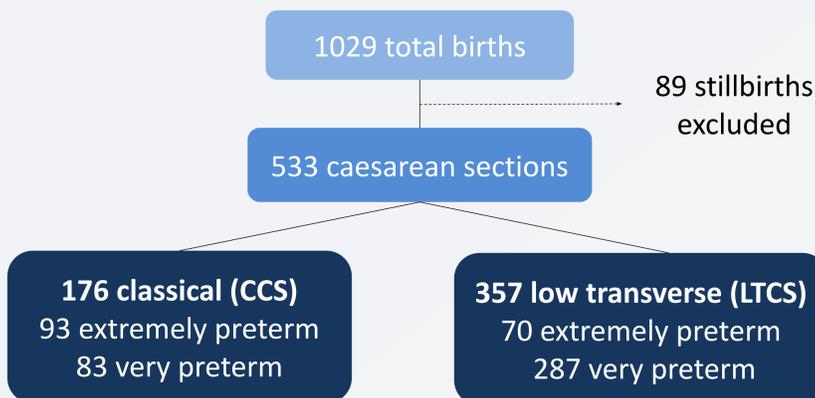
Introduction

Improved survivability of extremely preterm infants has led to increased rates of caesarean sections. Short-term maternal and neonatal risks of classical caesarean sections (CCS) in the context of extreme prematurity remain unclear [1].

It is postulated that a thicker lower uterine segment has greater surface area of transected myometrium resulting in higher blood loss, and therefore the rates of surgical complication may not differ between CCS and low transverse caesarean sections (LTCS) [2]. We examined maternal and neonatal complications associated with CCS versus LTCS at extremely preterm (23-28 weeks) and very preterm gestational ages (28-32 weeks).

Method

Retrospective cohort study was conducted at Royal Brisbane and Women's Hospital between 2016 and 2020.



Results

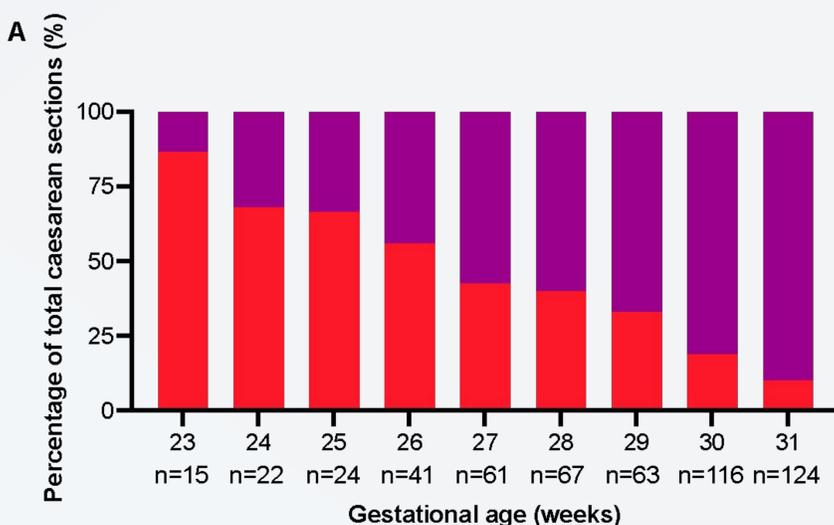


Figure 1. Higher rates (%) of CCS than LTCS are performed at earlier gestational ages by Cochran-Armitage test (P<0.001).

Results

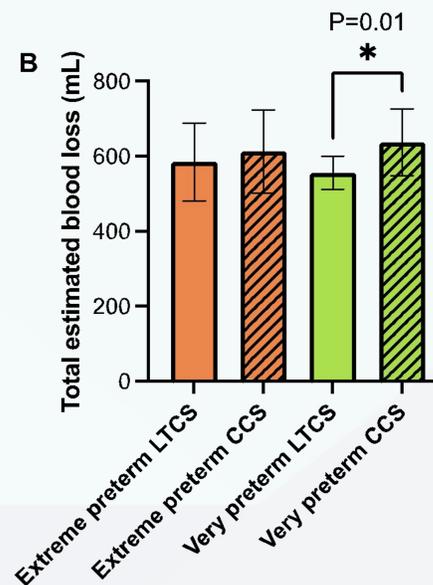


Figure 2. CCS are associated with increased total estimated blood loss at very preterm births compared to LTCS (P=0.01), but not in the extremely preterm cohort (P=0.89), using Kruskal-Wallis H test.

Table 1. Maternal and neonatal complications in CCS v LTCS (n/%)

	LTCS	CCS	Adjusted	
			P value	Odds ratio (95% CI)
Extremely preterm births				
Postpartum haemorrhage	7 (10.00%)	10 (10.75%)	0.77	1.12 (0.40 - 3.50)
Sepsis	0 (0.00%)	2 (2.15%)	-	-
Obstetric wound infection	1 (1.43%)	2 (2.15%)	0.73	1.54 (0.13 - 18.33)
Intensive care admissions	0 (0.00%)	2 (2.15%)	-	-
Neonatal respiratory distress	83 (90.22%)	92 (91.09%)	0.85	1.33 (0.07 - 25.26)
Neonatal sepsis	7 (7.61%)	13 (12.87%)	0.68	1.25 (0.44 - 3.53)
Very preterm births				
Postpartum haemorrhage	20 (6.97%)	8 (9.64%)	0.20	1.81 (0.73 - 4.49)
Sepsis	3 (1.05%)	2 (2.41%)	0.32	2.57 (0.40 - 16.57)
Obstetric wound infection	2 (0.70%)	1 (1.20%)	0.46	2.54 (0.21 - 30.25)
Intensive care admissions	0 (0.00%)	1 (1.20%)	-	-
Neonatal respiratory distress	301 (79.42%)	80 (90.91%)	0.59	1.27 (0.53 - 3.09)
Neonatal sepsis	7 (1.85%)	5 (5.68%)	0.37	1.81 (0.50 - 6.52)

Discussion

- CCS are associated with higher total estimated postpartum blood loss than LTCS in very preterm births.
- Maternal and neonatal adverse outcomes do not significantly differ in CCS compared to LTCS in extremely preterm or very preterm births.
- CCS may be safer to perform than LTCS in extremely and very preterm births except for obstetric risk factors such as multiple pregnancy and placenta accreta.

References

1. Reddy et al. 2015. *Am J Obstet Gynecol* 213(4):538
2. Kawakita et al. 2017. *Am J Obstet Gynecol* 216(3):312
3. Herman et al. 2021. *BMC Pregnancy Childbirth* 21(1):107
4. Kupari et al. 2016. *Arch Gynecol Obstet* 294(1):41-6