Maternal complications after extremely preterm classical and low transverse caesarean sections

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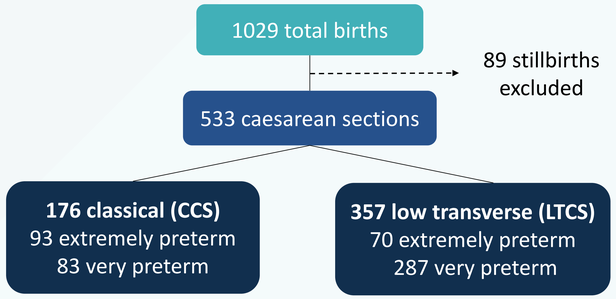
INTRODUCTION

Improved survivability of extremely preterm infants has led to increased rates of caesarean sections. Short-term maternal 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 complications associated with CCS versus LTCS at extremely preterm (23-28 weeks) and very preterm gestational ages (28-32 weeks).

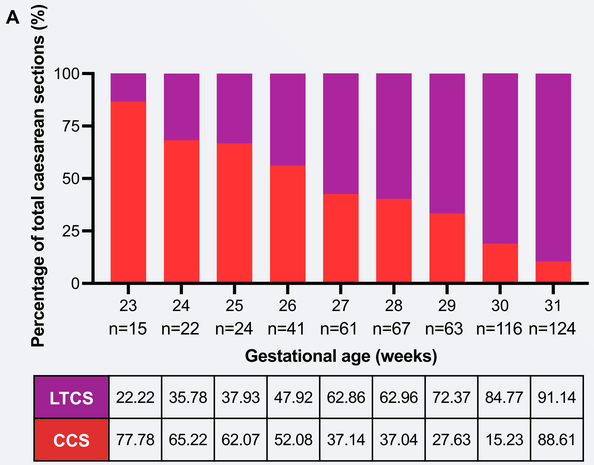
METHOD

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



RESULTS

	Extreme preterm		Very preterm		Extreme preterm LTCS vs. CCS Adjusted P value	Very preterm LTCS vs. CCS Adjusted P value
	LTCS	CCS	LTCS	CCS		
Maternal outcomes						
Composite adverse events, n (%)	14 (20.00%)	26 (27.96%)	63 (21.95%)	25 (30.12%)	0.91	0.46
Duration of operation, mean (SD)	87 (0.39)	93 (0.59)	83 (0.41)	93 (0.56)	**0.03**	**<0.001**
Estimated blood loss (mL)	585 (460)	613 (543)	556 (397)	638 (410)	0.89	**0.01**
Length of stay (days)	7.30 (6.33)	10.13 (11.84)	7.87 (8.63)	9.51 (10.16)	0.59	>0.99
Sepsis	0 (0.00%)	2 (2.15%)	3 (1.05%)	2 (2.41%)	-	0.32
Obstetric wound infection	1 (1.43%)	2 (2.15%)	2 (0.70%)	1 (1.20%)	0.73	0.46
Endometritis	0 (0.00%)	1 (1.08%)	1 (0.35%)	0 (0.00%)	-	-
Blood transfusion	2 (2.86%)	10 (10.75%)	16 (5.57%)	5 (6.02%)	0.37	0.79
Thromboembolic event	0 (0.00%)	0 (0.00%)	2 (0.70%)	0 (0.00%)	-	-
Intensive care admissions	0 (0.00%)	2 (2.15%)	0 (0.00%)	1 (1.20%)	-	-



	23	24	25	26	27	28	29	30	31
LTCS	22.22	35.78	37.93	47.92	62.86	62.96	72.37	84.77	91.14
CCS	77.78	65.22	62.07	52.08	37.14	37.04	27.63	15.23	88.61

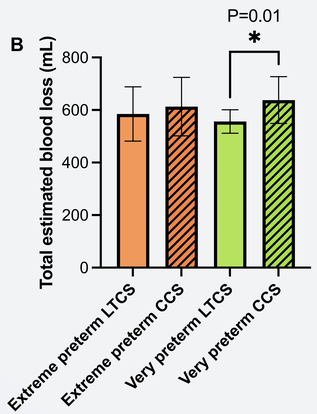


Figure 1. (**A**) Trend for higher rates of CCS than LTCS at earlier gestational ages by Cochran-Armitage test (P<0.001). (**B**) CCS associated with increased total estimated blood loss at very preterm births compared to LTCS using Kruskal-Wallis H test.

DISCUSSION

- Individual and composite maternal adverse outcomes, which allows for the pooling of clinically important post-operative complications [3], assessed the risk of CCS versus LTCS.
- CCS were associated with higher total estimated postpartum blood loss than LTCS in very preterm births (P=0.01), but not in the extremely preterm cohort (P=0.89).
- Composite maternal adverse outcomes did not significantly differ in CCS compared to LTCS for extremely preterm or very preterm births after correcting for multiple pregnancy, placenta accreta and non-cephalic fetal presentation.
- Investigation of other risk factors contributing to perinatal morbidity in preterm CCS is required.
- Infants born at the lower limit of viability remain vulnerable to high rates of complications related to prematurity [4]. Therefore, more data on both maternal and neonatal morbidity is important.

REFERENCES

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