

Intraoperative Blood Loss at Caesarean Section: The Impact of Predelivery Anaemia.

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Background

A recent meta-analysis concluded that predelivery anaemia is associated with postpartum haemorrhage (PPH) at caesarean section (CS)¹. However, this conclusion was formed from two studies: the first excluded planned CS delivery² and the second study compared predelivery haemoglobin level with likelihood of severe PPH (>1500ml) alone³.

On average, a CS results in an estimated blood loss of 440-800ml, and severe PPH is rare. We aimed to address the gap in the literature regarding the impact of pre-delivery anaemia at both emergency and elective CS on estimated blood loss (EBL) in a generalisable, clinical population.

Methods

1 month retrospective audit of all CS in a tertiary hospital. Demographic and obstetric data, indication for CS, use of oxytocics, EBL and pre- and post-haemoglobin was recorded. Anemia was defined as haemoglobin <110 g/L.

Results

There were 91 caesarean sections, 80 (87.9%) CS at term.

- The mean estimate blood loss was 654ml (SD=1031ml), range (200ml to 10,000ml).
- 8 (8.8%) of women had a PPH >1000ml
- 12 women (13.2%) had predelivery anemia. Mean EBL for a woman with anemia was 731.8 (SD=491.6), compared to 525.3ml (SD = 242.0) for women without.

	Variable	N (%)	Mean Blood Loss mls (SD)
Emergency Category	Urgent	9 (9.9)	544 (133.3)
	Emergency (< 1 hour)	19 (29.9)	528 (185.1)
	Emergency (< 4 hours)	10 (11.0)	500 (244.9)
	Elective LSCS	53 (58.2)	570 (345.9)
Indication for LSCS	1 previous	32 (35.2)	515.6 (210.0)
	Fetal distress	18 (19.8)	552.8 (165.8)
	Failure to progress	12 (13.2)	541.7 (242.0)
	Breech	5 (5.5)	450.0 (111.8)
	>1 previous	5(5.5)	662.5 (495.6)
	Maternal request	4 (4.4)	412.5 (62.9)
	Failed IOL	3 (3.3)	366.7 (57.7)
Surgeon	Unstable lie	3 (3.3)	1233.3 (642.9)
	Consultant	31 (34.1)	556.7 (322.9)
	Senior Registrar	21 (23.1)	571.4 (314.9)
	Registrar	39 (42.9)	500.6 (249.8)

Key Findings

X No association between blood loss and age, gestation, parity, seniority of surgeon, weight of baby, or other indications for LSCS (except placenta praevia).

⌋ Significantly more blood loss associated with >1 previous CS compared to first CS ($p=0.01$).

⌋ Women with anemia prior to delivery lost approximately 206.5ml more than women without anemia ($p= 0.03$).

Discussion

- Reducing blood loss at caesarean delivery is a priority for quality improvement. All surgeons should reflect on the clinical characteristics of each caesarean section to estimate and plan for a reasonable blood loss.
- A particular focus should be on women with anemia at baseline, as this was an independent predictor of blood loss at caesarean delivery.
- In terms of postpartum management, there should be a focus on the amount of blood loss as well as the patient's pre-operative haemoglobin.

References

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