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Research Brief

Prophylactic oxytocin infusion for reducing blood loss during elective caesarean delivery: A randomised controlled trial

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Background and objectives: Optimum dose, route, and timing of oxytocin administration to prevent postpartum haemorrhage during caesarean section are uncertain. We compared the effect of oxytocin infusion initiated either at skin incision or after head delivery on blood loss and ease of foetal head delivery during elective caesarean section.

Methods: In this open-label, randomised trial with parallel arms, 68 women with singleton pregnancies in cephalic presentation, undergoing elective caesarean delivery at term in a tertiary centre in Puducherry, were enrolled. Randomisation was performed using a simple random approach. Allocation was concealed in sequentially numbered, opaque, sealed envelopes, which were opened after informed consent to allocate participants to receive an oxytocin infusion (6 mIU/min), started either at the time of skin incision (intervention group) or after foetal head delivery (control group). All received oxytocin 5IU bolus after head delivery, followed by infusion for four hours postpartum. The primary outcome was the amount of blood loss.

Results: Mean blood loss was lower among those started on oxytocin skin incision than the control group (485.8±159.2 mL *vs.* 589.1±216.6 mL, P=0.029). Median haemoglobin decline was significantly lower in the intervention group (0.6 *vs.* 1.0 g/dL, P=0.011). Ease of foetal head delivery, need for additional uterotonics, and neonatal outcomes were comparable between the groups.

Interpretation and conclusions: The initiation of oxytocin at the skin incision may lead to significantly lower blood loss and a lower fall in haemoglobin level compared to its initiation after foetal head delivery among women undergoing elective pre-labour caesarean section at term.

Keywords Caesarean section; Ease of foetal head delivery; Hypotension; Optimum timing of initiation; Oxytocin