Analgesia and Anesthesia for the Obstetric Patient

Oxytocin Management

First stage of labor[1]

Oxytocin may be given to induce or augment labor. The goal is to increase uterine activity to dilate the cervix without causing fetal compromise due to uterine tachysystole.

Third stage of labor

Active management of the third stage of labor includes the recommendation of prophylactically administering oxytocin.[2] This has been found to reduce the incidence of, and be a prophylactic treatment for, postpartum hemorrhage, as uterine atony accounts for 70% to 80% of postpartum hemorrhage cases.[2,3] See **Postpartum Hemorrhage** for more details on prevention and treatment.

Large and rapidly administered oxytocin boluses should be avoided to minimize side effects. These include flushing, nausea and vomiting, tachycardia, hypotension, delayed water retention, hyponatremia, and seizures.[4,5] It is recommended that an established evidence-based protocol, such as the Rule of Threes, or an IV infusion regimen your institution warrants as appropriate, is standardized and utilized.[6,7] These techniques are described below in Table 1.

Recommendations include administering oxytocin in pre-mixed intravenous (IV) bags by maintenance infusion, per institutional policy.[8] If providing oxytocin via IV is unavailable, it is recommended that the maternal patient receives an intramuscular injection of 10 units.[2] In the event that oxytocin is unavailable, see ACOG's FAQ on recommendations.

Table 1. Oxytocin administration protocol examples

Rule of Threes[4,6,9]
+ 1st bolus dose, administered to all maternal patients • On cord clamp, administer 3 units IV oxytocin over 30 to 45 seconds. It is suggested to mix the 3 units in a 10 mL syringe for easier administration. • 3 minutes following the 1st bolus dose, ask the obstetric provider to assess uterine tone. » If uterine tone is adequate, no further interventions are required. » If uterine tone is inadequate, administer 2nd dose of oxytocin 3 units IV, or another uterotonic agent per the direction of the obstetric provider. • 3 minutes following the 2nd bolus dose, ask the obstetric provider to assess uterine tone. » If uterine tone is adequate, no further interventions are required. » If uterine tone is inadequate, administer 3rd dose of oxytocin 3 units IV, or another uterotonic agent per the direction of the obstetric provider. • If uterine atony continues after three total doses of oxytocin, other uterotonics should be administered. + Initiate a constant infusion of 3 units per hour for up to five hours.

IV Infusion Regimen[4]
Elective Cesarean Delivery + Bolus 1 IU oxytocin; start oxytocin infusion at 2.5-7.5 IU/hr (0.04-0.125 IU/min) **Intrapartum Cesarean Delivery** + 3 IU oxytocin over ≥30 sec; start oxytocin infusion at 7.5-15 IU/hr (0.125-0.25 IU/min)

Questions? Contact us.
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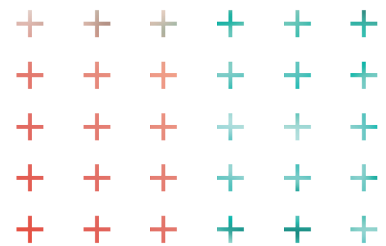
This one-pager is an excerpt from the Practice Guidelines, Analgesia and Anesthesia for the Obstetric Patient. See the full guidelines at AANA.com/PracticeManual



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