

OBSTETRIC ANESTHESIA

BY

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Maternal physiology in pregnancy

- **Respiratory** – capillary engorgement of mucosa prone to airway trauma, airway edema causing ↑difficulty in intubation.
- Minute ventilation ↑50% above nonpregnant levels, lung volumes are altered with ↓ in FRC, ERV, RV due to enlargement of the uterus with cephalad displacement of the diaphragm; rapid induction, emergence from anesthesia

Maternal physiology

Cardiovascular: ↑ blood volume, plasma vol > red cell vol leading to dilutional anemia

Cardiac output ↑ highest immediately postpartum,
blood pressure not ↑ due to ↓ peripheral vascular resistance.

Supine hypotension syndrome may occur after 20 weeks due to gravid uterus obstructing the aorta and IVC when supine, left uterine displacement recommended

Maternal physiology

- **Nervous system:** ↓ anesthetic requirements for volatile gases thought to be related to endorphins and progesterone.
- Less local anesthetic for regional blocks. Reasons include distended epidural veins, low csf protein ↑ proportion of active drug, hormonally induced sensitivity to local anesthetics.

Maternal physiology

- **Gastrointestinal:** Gravid uterus pushes pylorus causing gastric reflux, heartburn, full stomach with ↑ risk of aspiration. Prophylactic use of antacids recommended prior to anesthesia, rapid sequence induction.

Analgesia during labour

- **Systemic medications** –no ideal drug, crosses the placenta, depressant effects in the fetus.
- Benzodiazepines, opioids, ketamine.
- Meperidine popular opioid during the first stage. Risk of fetal depression related to interval of last drug injection.

Analgesia(contd)

- Regional Anesthesia:
- Lumbar epidural analgesia
- Paracervical
- Pudendal block
- Spinal anesthesia

Anesthesia for C- section

- Selection of general versus regional depends on the desire of the parturient and presence of or absence of fetal distress.
- Spinal anesthesia most common. Sensory level is T4.
- Lumbar Epidural an alternative, slower onset of systemic blockade with more gradual↓ in blood pressure.

Anesthesia for C-section

- **General anesthesia:** rapidity and reliability makes this method favourable.
- Oral antacids
- Preoxygenation
- Rapid sequence induction
- Left uterine displacement
- Low dose nitrous oxide until delivery of the fetus.