

Obstetric Anesthesia – Pocket Guide

VERSION oct 2024

LABOR EPIDURAL: Optimal puncture level: L2-L3

Contraindications include: PLT, INR, aPTT according to:

- Local skin infection
- Mild preeclampsia within 6 hours
- Coagulation disorder
- Severe preeclampsia within 2 hours
- Hypovolemia
- IUD (IU Fetal Death) within 4 hours

Dosage

Local Anesthetic:	Opioid:	Administration method/doses:	Extra doses:
Bupivacaine 0,6-1 mg/ml	Sufentanil 0.5 µg/ml	PIEB: 7-10 ml / 45-60 min	Test dose: Lidocaine 40 mg
Ropivacaine 1 mg/ml	Fentanyl 1-3 µg/ml	+ PCEA: 5 ml 1/h, lockout 10 min	Bolus: Bupivacaine 10-15 mg
Bupivacaine 2,5 mg/ml (without opioid)		(alt continuous inf: 5-10 ml/h)	+ ev Sufentanil 5-10 µg

Mix yourself 50 ml Bupivacaine 0,6 mg/ml + Sufentanil 0,5 µg/ml = 12,5 ml Bupivacaine 2,5 mg/ml + 5 ml Sufentanil 5 µg/ml + 32,5 ml NaCl

Inadequate pain relief: Check catheter position, pump, & spread (if below Th10 - Too low dose? Non-functional EDA?)  
Increasing perineal pain: - Is the delivery near? Unilateral pain: - Withdraw catheter / Bolus in lateral position?

Bolus for effective Epi that has lost effect: Bupivacaine 2,5 mg/ml - 6 ml + Sufenta 5 µg/ml - 1 ml + NaCl 3 ml = total 10 ml

TOP-UP labor epidural anesthesia during emergency cesarean section

Requires well-functioning epidural anesthesia! Administer sufenta first!  
Ropivacaine 7,5 mg/ml 15-20 ml + Sufentanil 5 µg/ml 2-4 ml = 10-20 µg + Morfin special® 0,4 mg/ml, 5 ml = 2 mg  
Tip: height in cm x 0.1 = ml (160 cm = 16 ml) Administered postpartum, caution with high spread

SPINALA DOSE OF drugs: ⚠ Caution with spinal anesthesia after a TOP-UP EDA that hasn't worked – risk of large doses being administered spinally!

Spinal anesthesia during C-section:

- Bupivacaine w gluc. 5 mg/ml 1,8-2,2 ml = 9-11 mg
- Fentanyl 50 µg/ml 0,2-0,3 ml = 10-15 µg (alt Sufentanil 5 µg/ml) (0,6-1 ml = 3-5 µg)
- Morphine special 0,4 mg/ml 0,25 ml = 100 µg
- Puncture level L3-L4 (L2-L3) – spread to T4
- Systolic BP should be maintained at ≥90% of the original blood pressure. Infusion of phenylephrine 0.1 mg/ml, 10-30 ml/h
- Ondansetron 4 mg as prophylaxis or as needed for nausea
- In case of severe visceral pain - 25-50-100 µg fentanyl

Spinal anesthesia for birth injury/placental abruption:

- Bupivacaine w gluc. 5 mg/ml 1,2-1,4 ml = 5-7 mg
- Fentanyl 50 µg/ml 0,2 ml = 10 µg

Epi Top-Up: Sufentanil® 10-20 µg + Naropin® 80-100 mg

Spinal anesthesia during vaginal delivery: Beware: Pathological CTG

Indication: Delivery within 2-3 hours. Only in exceptional cases for first-time mothers. Monitoring: RR + BP every 5 minutes + staff in the room every 20 minutes. Then every 30 minutes  
- Bupivacaine® 5 mg/ml 0.2-0.25 ml = 1-1,25 mg  
- Sufentanil® 5 µg/ml 1-1,5 ml = 5-7,5 µg (can be given without LA)

GUIDELINES FOR SPINAL/EPIDURAL WITH HEMOSTASIS DISORDER & ANTICOAGULANTS: 5000

Risk factor	Normal risk	Low risk	High risk	Very high risk
LMH, prophylaxis <sup>1</sup>	>10 h	6-10 h	<6 h	
LMH, 2-dos prophylaxis <sup>2</sup>	>6 h	<6 h		
LMH, high dose prophylaxis <sup>3</sup> >24 h			12-24 h	6-12 h
LMH, treatment	Anti-Xa <0.1 (+ normal PT, aPTT, PLT)			
Heparin inf. completed	>4 h	<4 h		
NSAID, ASA prophylaxis ≤ 200 mg		+LMH > h	+LMH <10 h	
PT(INR), Epidural	≥1,2	1,3-1,5	1,6-1,8	>1,9
PT(INR), Spinal	≥1,4	1,5-1,7	1,8-2,0	>2,0
PreEC, PLT <6 h	>100			
Severe PreEC, PLT <2 h	>100	70-100	50-70	<50
ITP, PLT	>75	70-100	50-70	<50
IUD, samples*	<6 h	>6 h		Ablatio
Cholestasis, samples*	<24 h	>24 h		
General anesthesia	Fasting for elective C-section	Delivery emergency surgery	Full stomach emergency surgery	Preeclampsia
None	No tests are needed before spinal/epidural anesthesia			

Complications:

- Blood pressure drop >20-30%: Left lateral position, infuse Ringer's Acetate (RA), IV Ephedrine
- Low respiratory rate: IV Naloxone 0.4 mg/ml - 0.25-0.5 ml IV
- Severe itching: IV Naloxone 0.4 mg/ml - 0.1 ml IV - repeat as needed

GENERAL ANESTHESIA FOR EMERGENCY C-SECTION:

- Allergy? Previous illnesses? Airway assessment!
- Sodium citrate 30 ml orally
- Nasal cannula O2 15 l/min - remove after intubation!
- Pre-oxygenate with 8 deep breaths using a mask with 100% O2.
- Optimize sniffing position! Obese/short neck = Oxford pillow!

— WHO-time out. The surgeon gives the go-ahead for anesthesia to start —

Blood pressure should be ≤ 150/105 mmHg before induction of anesthesia. If needed, administer 4-8 ml of labetalol 5 mg/ml intravenously or 1-2 sprays of nitroglycerin 0.4 mg/dose

In case of severe preeclampsia: Administer injection of alfentanil 1 mg = 2 ml (10 µg/kg) or remifentanil 1 µg/kg at induction

- Injection of Propofol 250 mg IV (2-3 mg/kg)
- Injection of Celocurin 100 mg IV (1 mg/kg based on actual weight)
- Anesthesiologist intubates with a video laryngoscope!
- Anesthesiologist announces start of surgery after confirmed tube placement

• Start sevoflurane at 8% + N2O if available. Titrate to MAC 1.2

• Extra IV cannula – at least green.

- Tranexamic Acid 1 g IV
- Nasogastric tube size 18

When the baby is delivered:

- Inject Fentanyl 200 µg IV
- Switch Sevoflurane to Propofol TCI

For postoperative pain management:

- Inject Morphine 0.1-0.2 mg/kg IV – consider PCA morphine
- Inject Paracetamol 1 g IV, inject Dynastad 40 mg IV
- Consider Clonidine 75 µg IV
- With epidural anesthesia (EPI), give special morphine 2 mg and reduce the IV dose
- TAP block or local anesthetic infiltration in the wound

SEVERE POSTPARTUM BLEEDING

Tone 60% atonia 30% surg trauma 10% placental 1% coag defect

Major bleeding: > 0.5 L Severe bleeding: > 1.0 L Life-threatening bleeding: > 2.5 L

Large IV cannula x 2

Tranex Acid 2 g IV

Crossmatch

Urinary catheter (Foley catheter)



- Early aortic compression

- 4 Blood : 4 Plasma : 1 Plt
- Fibrinogen (Riastap®) 4 g
- Hgb > 9
- Plt > 100
- pH > 7.2
- Fibrinogen > 2,5
- Ca2+ > 1,0
- Temp > 36 °

Normal TEG & severe bleeding: Prioritize surgical cause of bleeding! Treat congenital coagulopathy! If needed, administer Octostim® 0.3 µg/kg If needed, consult coagulation specialist: Novoseven® Oplex® Consider Atenuvif® If AntiTr < 0.5 kIE/L

Pharmacological treatment of atonic bleeding after placental delivery: If anesthesia - switch to intravenous anesthesia

Administer in the following order with a short observation period to assess the effect before the next medication

1. Inject **Oxytocin**® 8.3 µg/ml, 1 ml IV over 60 seconds. (1 ml Oxytocin 8.3 µg/ml = 5 units). Repeat once if needed. Relative contraindications: Ischemic heart disease (IHD), arrhythmias. Too rapid injection: BP, ↑HR.
2. Inject **Methergin**® 0.2 mg/ml, 1 ml IM or slowly IV over 60 seconds. Repeat as needed, maximum 4 times. Contraindications: Severe preeclampsia, hypertension, vascular disease, allergy to ergotamines. Relative contraindication: Mild-moderate preeclampsia.
3. Infuse **Oxytocin** (8 ml Oxytocin 8.3 µg/ml in 500 ml NaCl 0.9%). Administer at 120 ml/h for 60 minutes, then 60 ml/h for 60 minutes. 4. The individual situation will determine whether to treat with a or b first:
  - a. Inject **Prostinfenem**® (carboprost) 0.25 mg/ml, 1 ml IM. Repeat as needed, up to 8 times every 15 minutes. Contraindication: Asthma.
  - b. Administer **Cytotec**® (misoprostol) 0.2 mg, 3 tablets rectally. Repeat if needed after 2 hours. Contraindication: Allergy to misoprostol.
5. If Bricanyl® (terbutaline) has been given as a uterine relaxant: Inject **Inderal**® (propranolol) 1 mg/ml, 1 ml slowly IV

CARDIAC ARREST IN PREGNANT WOMAN

Advanced CPR according to routine Gestational week > 20 = perimortem C-section The baby should be delivered within 5 minutes after cardiac arrest

SEIZURE IN PREGNANCY > 20 weeks = eclampsia until proven otherwise

Stabilize ABCDE + administer magnesium sulfate (primarily as prophylaxis against recurrent seizures) Magnesium sulfate bolus: IV 0.5 mmol/ml 35 ml over 5-10 minutes (=17.5 mmol) then infusion 0.1 mmol/ml – 40 ml/h = 4 mmol/h (therapeutic conc = 1,8-3,0 mmol/L)