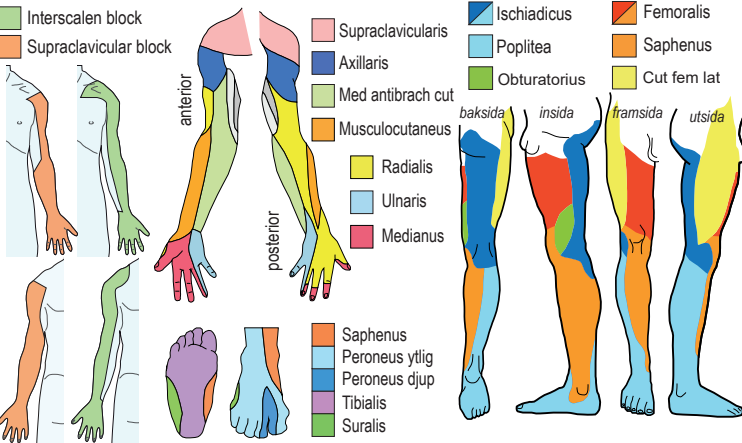


Regional Anesthesia Pocket Guide

VERSION APRIL 2020

	Maximum dose Single dose - mg/kg - daily dose	Onset	Duration	Toxicity
Mepivacaine 10 / 20 mg/ml (+adr 5 µg/ml)	400 mg - 5 mg/kg - 1000 mg	3-5 min	90-180 min	Low
Lidocaine 10 mg/ml, 20 mg/ml	400 mg - 4 mg/kg - 1200 mg	< 2 min	60-120 min	Low
Prilocaine 5 mg/ml	400 mg - 5 mg/kg - 1200 mg	5 min	90-180 min	Low
Levobupivacaine 2.5 / 5 / 7.5 mg/ml	150 mg - 2 mg/kg - 400 mg	5-10 min	4-18 h	Med
Ropivacaine 2.5 / 7.5 / 10 mg/ml	300 mg - 3 mg/kg - 800 mg	5-15 min	4-18 h	Med
Bupivacaine 2.5 / 5 mg/ml (+adr 5 µg/ml)	150 mg - 2 mg/kg - 400 mg	5-10 min	4-18 h	High



LAST - Local Anesthetic Systemic Toxicity

Treatment of toxic reaction:

- Back position, slightly raised head end, monitor, O2 on mask.
- In case of seizures → diazepam 0.1 mg/kg or Propofol 10-60 mg i.v.
 - In case of drop in blood pressure → vasopressor
 - In bradycardia → Atropine 0.5-1 mg i.v.
 - For acidosis → NaBic (50-100 ml) on liberal indication.
 - For widened QRS-complex → Hypertonic NaCl (200 mmol Na fast)
 - In circulatory collapse → CPR + lipid treatment (ILE)

Lipid therapy (ILE)

Bolus 20% Intralipid 1.5 ml/kg fast iv. → inf 0.25 ml/kg/min for 10 min

Symptoms:

- Slurred speech
- Numbness in the tongue
- Hyperacusis, tinnitus
- Visual disturbances
- Tremor
- Seizures
- Unconsciousness
- Bradycardia
- Asystole

Regional nerve block:

- Absolute contraindications:**
- Severely affected coagulation.
 - Skin infection at the injection site
- Relative contraindications:**
- Neurological dysfunction.
 - Back pain, spinal stenosis or back trauma.
 - Patients affected by circulation.
 - Sepsis
 - Patients with consciousness impairment.
 - Kidney failure

Anti coagulation - discont. → insertion

Heparin iv	4 h + normal platelets & APTT
Fondaparinux	≤ 2.5 mg/day 36 h
Dalteparin	< 2500 / < 40 mg 6 h
Enoxaparin	≤ 5000 U / ≤ 40 mg 10 h
	> 5000 U / > 40 mg 24 h
Rivaroxaban	18 h
Dabigatran	48 h
Apixaban	24 h

Low dose/High dose ASA 3/7 days
Low dose ASA + spinal - at morbidity gain

ADP-block: 5 days

Clopidogrel Plavix®	Ticagrelor Brilique®
Ticlopidin Ticlide®	Pracurgelor Efient®

ADP-block + spinal - at mortality gain

NSAID: (COX 2 inhib - no limits)

Naproxen	48 h	Diclofenac	12 h
Ketorolac	24 h	Ibuprofen	12 h

Epidural anaesthesia - dosage:

Test dose: Mepivacaine 20 mg/ml - 2-3 ml.

Dose for surgical anaesthesia:

Mepivacaine	20 mg/ml - 10-17.5 ml (duration ≈ 2 h)
Ropivacaine	7.5 mg/ml - 15-25 ml (duration 3-5 h)
Levobupivacaine	5.0 mg/ml - 15-30 ml (duration 3-5 h)

Repeat if needed bolus with 25-75% of starting dose.

Post op infusion:

Ropivacaine	2 mg/ml, 3-14 ml/h, 12-28 mg/h
Breiviks blend	4-16 ml/h
(Bupivacaine 1 mg/ml, Fentanyl 2 µg/ml, Adrenaline 2 µg/ml)	

Post op bolus:

Ropivacaine	2 mg/ml 4-6 ml thor, 6-12 ml lumbal
Mepivacaine	2 mg/ml, 4-6 ml thor vs 6-12 ml lumbal
Fentanyl	20-50 µg, Sufentanil 10-20 µg, Morphine 2-3 mg

Coagulation lab:

Type of gain:	comfort	morbidity	mortality
PT	spinal: ≤1.4 Epidural: ≤1.2	>1.8 >1.6	>2.2 >1.8
Plat	spinal: >100 Epidural: >100	>50 >80	>30 >50

NOTE on extended APTT - Causes:
Lack of XII, XI, X, IX, VIII, V, II, fibrinogen
Lupus-ak, heparinbeh, high doses LMHV & PT < 3

Insertion level of epidural:

• Thoracotomy	Th 6-7
• High laparotomy	Th 8-9
• Low laparotomy	Th 10-12
• Nefrectomy	Th 8-10
• Sectio	L2 - L4
• Hip, knee-open	L1-L4

Anatomical landmarks:

• Spina scapula	T3
• Angulus scapula	T7
• Crista iliaca	L4

Sensory level distribution:

- Th 1 - angulus sterni
- Th 4 - mamill
- Th 8 - rib arch
- Th10 - umbilicus
- Th12 - groin

Bromage:

- 0 = Lifts the leg with the knee stretched.
- 1 = Bends at the knee joint
- 2 = Bends at the ankle
- 3 = Can not bend the ankle, paralysis

Spinal anaesthesia dosage:

Duration depends on dose (mg)
Lower dose to: Pregnant, obese, short (smaller CSV vol)
Distribution: • patient position • baricity • puncture level
• dose (mg) • volume (at least 1.5 ml)

Bupivacaine spinal (isobar)	5 mg/ml:
Dose:	2-4 ml (10-20 mg)
Bupivacaine spinal heavy	5 mg/ml: L5, S1,2
Dose:	1-4 ml (5-20 mg)

Dose	Duration	CSF-spread
Sufentanil 2-10 µg	2-6 h	minimal
Fentanyl 5-25 µg	2-6 h	minimal
Morphine spec 0,1-0,3 mg	6-24 h	widespread
90-min spinal hip: Bupivacaine heavy 7,5-15 mg + Sufentanil 7,5 µg		

Sectio:

- Bupivacaine tung 9-11 mg
- Fentanyl 10 µg
- Morphine special 0,1 mg

Morphine - spinal:

- Bupivacaine tung 10 mg
- Morphine special 0,1 mg