

Use of local anesthetics for wound infiltration or regional nerve blocks is an important component of the multimodal approach to pain management. Local anesthetics interrupt the input of noxious stimulation to the nervous system during surgery thereby improving pain relief, reducing nociceptor sensitization and excitation of the nervous system, and diminishing surgical stress. Epinephrine can be added to local anesthetic nerve blocks to further prolong anesthesia and analgesia. A catheter may also be placed to allow for continuous administration of local anesthetic.

Drugs	Brand Names	Duration of Analgesia
Lidocaine	Xylocaine®	3-5 hours, variable
Mepivacaine	Carbocaine® Polocaine®	Wound infiltration 45-90 minutes Nerve block 4-6 hours
Bupivacaine	Marcaine® Sensorcaine®	Wound infiltration 2-4 hours Nerve block 8-18 hours
Ropivacaine	Naropin®	Wound infiltration 2-6 hours Nerve block 8-15 hours

Duration of both anesthesia and analgesia from a nerve block may vary widely between individuals. The effects of perineural catheters typically dissipate anywhere from 30 minutes up to several hours, depending on the location of the catheter. Occasionally the block will resolve with return of motor function and sensation but analgesia (pain relief) is more prolonged than expected. If total anesthesia (loss of motor function and sensation) does not resolve within the anticipated time an MD should be contacted.

It is important for the nurse caring for a patient postoperatively to understand the type of block and anticipated duration of action. Patients must be instructed to protect the numbed area from injury. Systemic analgesics (oral or IV pain medicines) should preemptively be administered at the appropriate time to smooth the transition from complete anesthesia (numbness) to systemic analgesia (pain control). A systemic dose of analgesic should be administered as soon as the patient begins to have return of sensation to the affected area such as a tingling. **Do not wait for pain to administer the first dose of analgesic.**

Questions A Nurse Should Be Familiar With or Ask the Anesthesiologist
What kind of nerve block does the patient have? What is the extent of the motor and sensory block? Will this block affect blood pressure, heart rate, bowel function, ability to ambulate? How long will this block last? Is it likely that other nerves were blocked too, for example, those to the face, vocal cords, diaphragm, bladder? Do I need to restrict use of systemic opioids, anti-coagulants, non-steroidal antiinflammatory analgesics (NSAIDs)? Who do I call for more information or help?

References:

- McLure HA, Rubin AP. Review of local anesthetics. *Minerva Anestesiologica* 2005;71(3):59-74.
- Zink W, Graf BM. Benefit-risk of ropivacaine in the management of pain. *Drug Safety* 2004;27(14):1093-1114.
- Williams BA, et al. Rebound pain scores as a function of femoral nerve block duration after anterior cruciate ligament reconstruction: retrospective analysis of a prospective, randomized controlled trial. *Regional Anesthesia and Pain Medicine* 2007;32(3):186-192.
- The New York School of Regional Anesthesia, Nerve Blocks, retrieved 8/3/2010 from www.nysora.com
- Macintyre, P. E., & Schug, S. A., (2007). *Acute Pain Management: A Practical Guide* (3rd ed.). Saunders-Elsevier