

lower doses of each class can be given, thereby lowering the side effects of each individual drug, but increasing overall efficacy.<sup>5,6</sup> Drugs commonly used in this framework include acetaminophen, non-steroidal anti-inflammatory drugs (NSAID) or cyclo-oxygenase-2 inhibitors, dexamethasone, gabapentin, clonidine, dexmedetomidine, intravenous lidocaine, magnesium and ketamine. When timed correctly, however, regional anesthesia remains the best and most powerful opioid-sparing technique for many indications.

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## SP37 LOCAL ANAESTHETICS AND WOUND HEALING

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The potential tissue toxicity of local anesthetics and their interference with numerous pathways, among which G-protein coupled receptor pathways, has led to questions on whether local anesthetics may impair wound healing. It should be stressed first that no analgesic is perfect, there is always a trade-off, and side-effects will be found for every drug. Local anesthetics, in that regards, fare very well, with an excellent safety profile, decades of successful use in millions of patients, and, if applied correctly, superior pain relief since the pain is tackled right where it originates. There are two big wound healing scenarios: skin and bone. For both, a typical short course of local anesthetics in form of a single shot, or for a few days using continuous techniques, should be fine to the best of our knowledge. Basic and clinical evidence is presented to illustrate these points.

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## SP38 THA

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The most recent Total Hip Arthroplasty (THA) recommendations by the PROSPECT working group update previous work published in 2005 and updated 2010. We performed a systematic literature review of randomized controlled trials and meta-analyses published between July 2010 and December 2019, and found 521 studies, of which 108 randomized studies and 21 meta-analyses were finally included. Peri-operative interventions that improved postoperative pain include:

paracetamol; cyclo-oxygenase-2-selective inhibitors; non-steroidal anti-inflammatory drugs; and intravenous dexamethasone. In addition, regional anesthesia in form of select peripheral nerve blocks, single-shot local infiltration analgesia, intrathecal morphine and epidural analgesia were also found to decrease pain. Regional variation in use (more nerve blocks in Europe, more LIA in the United States) is noteworthy. Given a risk-benefit analysis, the PROSPECT group does not recommend use of femoral nerve blocks, epidural anesthesia, and gabapentinoids. The use of intrathecal morphine, similarly, should be subjected to a thorough risk-benefit analysis.

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## SP38.1 UPDATE ON ADJUVANTS FOR PAEDIATRIC PNBS

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Adjuvants in Pediatric regional Anesthesia

Per-Arne Lönnqvist

**Initial word of caution/Disclaimer** With the exception of clonidine and preservative free morphine none of the other adjuvant agents mentioned in this practice advisory guideline are registered for spinal/epidural administration. None of the agents are registered for injection close to peripheral nerve structures. Thus, the decision to use the drugs mentioned below as adjuvants to pediatric regional anesthesia will be governed by the individual practitioner's decision, departmental policy and the existing medicolegal situation.

Rational for using adjuvants

Even long-acting local anesthetics (racemic bupivacaine, levo-bupivacaine and ropivacaine) have a limited duration of action (typically 4–12 h of duration) balanced against the time period of more intense postoperative pain associated with moderate or major surgery (24–72 h). Prolongation of the block effect in order to better match pain duration can be accomplished by the use of catheter techniques that will allow repeated bolus administration or continuous infusion of local anesthetics.<sup>1</sup> However, the majority of pediatric surgical interventions do not merit the use of these more complicated and resource demanding options for postoperative analgesia. Thus, a popular alternative to achieve prolongation of a single injection nerve block is to use adjuvant drugs that are mixed with the local anesthetics and thereby increase the duration of the nerve block.<sup>2,3</sup>

Some of the advantages associated with the use of adjuvant drugs:

- Will increase block duration in such a way that it may be possible to perform the surgical procedure before the block starts to wear off (e.g. neonatal spinal anesthesia)
- Reduced general anesthetic requirement