

Regional Analgesia in Total Hip Arthroplasty: Evidence and Recommendations

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Background: Total hip arthroplasty (THA) is performed on high-risk surgical populations. Therefore, pain control should be balanced to optimise functional recovery and reduce postoperative morbidity. Regional analgesic techniques are commonly used in THA, but each method has benefits and drawbacks. We present evidence and recommendations for regional analgesia in total hip arthroplasty.

Methods: Evidence: systematic literature review (1966–Jul 2004) using the Cochrane protocol – select randomised trials of regional techniques in THA reporting postoperative pain. Supplementary information from similar orthopaedic procedures and clinical practice was also assessed. Recommendations: PROSPECT consensus, based on the evidence.

Results: Epidural, 11 studies: Continuous epidural local anaesthetic (LA) decreased pain scores and opioid use *vs.* general anaesthetic (GA) + IV morphine on demand. Ropivacaine decreased pain scores *vs.* morphine (both continuous doses). Adding clonidine to morphine or LA reduced pain scores and opioid use. Pros: reduction in mortality and common postoperative morbidities. Cons: cumbersome for mobilisation, rare major AEs/increased risk with anticoagulant therapy, staff intensive.

Spinal, 14 studies: LA + opioid decreased pain scores, opioid use and time to first analgesic request *vs.* LA alone. Bolus spinal morphine reduced pain scores and opioid use but increased urinary retention by 3-fold *vs.* bolus psoas compartment block. Pros: practical to administer, more profound nerve block than epidural, decreased risk of morbidity in high-risk patients. Cons: rare major AEs/increased risk with anticoagulant therapy, urinary retention.

Peripheral nerve block, 5 studies: Psoas compartment block decreased pain scores and opioid use *vs.* femoral nerve block. Bolus psoas compartment block + GA reduced intra-operative fentanyl, pain scores, postoperative morphine use and blood loss *vs.* GA alone. Bolus femoral nerve block + GA reduced time to first analgesic request, but had no significant effect on pain scores or opioid use *vs.* GA alone. Pros: fewer AEs than neuraxial or parenteral opioids. Cons: risk of rare major AEs, staff intensive, technical skill requirement.

Conclusions: Regional techniques have superior analgesic efficacy and decrease postoperative morbidity compared with systemic regimens. On balance of risks and benefits, peripheral neural blocks are recommended for routine use in THA. Spinal analgesia may also be used but urinary retention should be monitored. Epidural analgesia provides a less favourable risk/benefit profile in most patients, but may be considered if the risk profile of the patient allows. Further comparative studies of regional techniques are warranted, to assess pain, mobility and hospital stay.