

Perioperative Analgesia

Perioperative analgesia refers to pain management strategies implemented **before, during, and after surgery** to reduce pain, improve recovery, and minimize complications. It is a critical component of **multimodal perioperative care**, especially in enhanced recovery after surgery (ERAS) protocols.

Goals

- Prevent and control postoperative pain
- Reduce stress response to surgery
- Facilitate early mobilization and rehabilitation
- Minimize opioid use and related side effects
- Improve overall surgical outcomes

Phases of Perioperative Analgesia

Preoperative Phase

- Patient education and expectation setting
- **Pre-emptive analgesia**: analgesics *before incision* (e.g. paracetamol, NSAIDs, gabapentinoids)
- Optimization of comorbidities (e.g. renal function, anticoagulation)

Intraoperative Phase

- **Regional anesthesia**: spinal, epidural, nerve blocks (e.g. scalp block, TAP block)
- **Systemic analgesics**: opioids, NSAIDs, paracetamol, ketamine, lidocaine infusion
- **Adjuvants**: clonidine, dexmedetomidine, magnesium sulfate

Postoperative Phase

- **Multimodal analgesia**: combining different drug classes (e.g. paracetamol + NSAID + low-dose opioid)
- **Patient-controlled analgesia (PCA)**
- Continuation of **regional techniques**: epidural infusion, nerve catheter
- **Non-pharmacological methods**: cold therapy, physical therapy

Multimodal Analgesia

This is the cornerstone of effective perioperative pain management:

- **Opioid-sparing techniques**
- Use of **regional blocks** and **non-opioid drugs**

- Reduces opioid-related side effects: nausea, sedation, ileus

Considerations

- Type and extent of surgery (minor vs. major)
- Patient factors: age, renal/hepatic function, opioid tolerance
- Risk of chronic post-surgical pain
- Avoiding drug interactions and adverse effects

Example: Neurosurgery (Scalp Blocks)

In craniotomies, **scalp nerve blocks** using **bupivacaine ± clonidine** can:

- Reduce intraoperative hemodynamic fluctuations
- Provide postoperative analgesia
- Reduce opioid requirements

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