



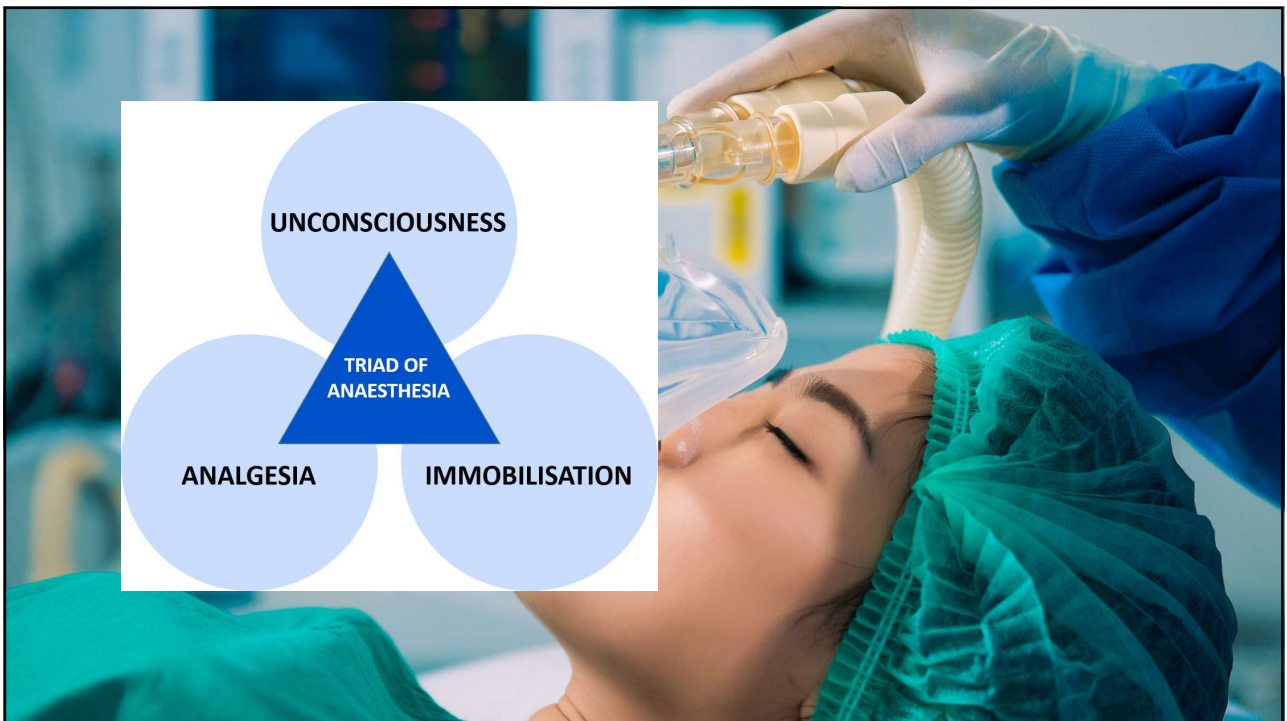
Multimodal general anesthesia



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Multimodal anesthesia for ambulatory surgery

Multimodal approach

- Synergistic and additive analgesic effects
- Dose reduction
- Less adverse effects
- Earlier discharge scoring criteria
- Less unanticipated admissions and re-admissions

Rescue Opioids: Tramadol, (oxycodone)

Paracetamol and NSAID's

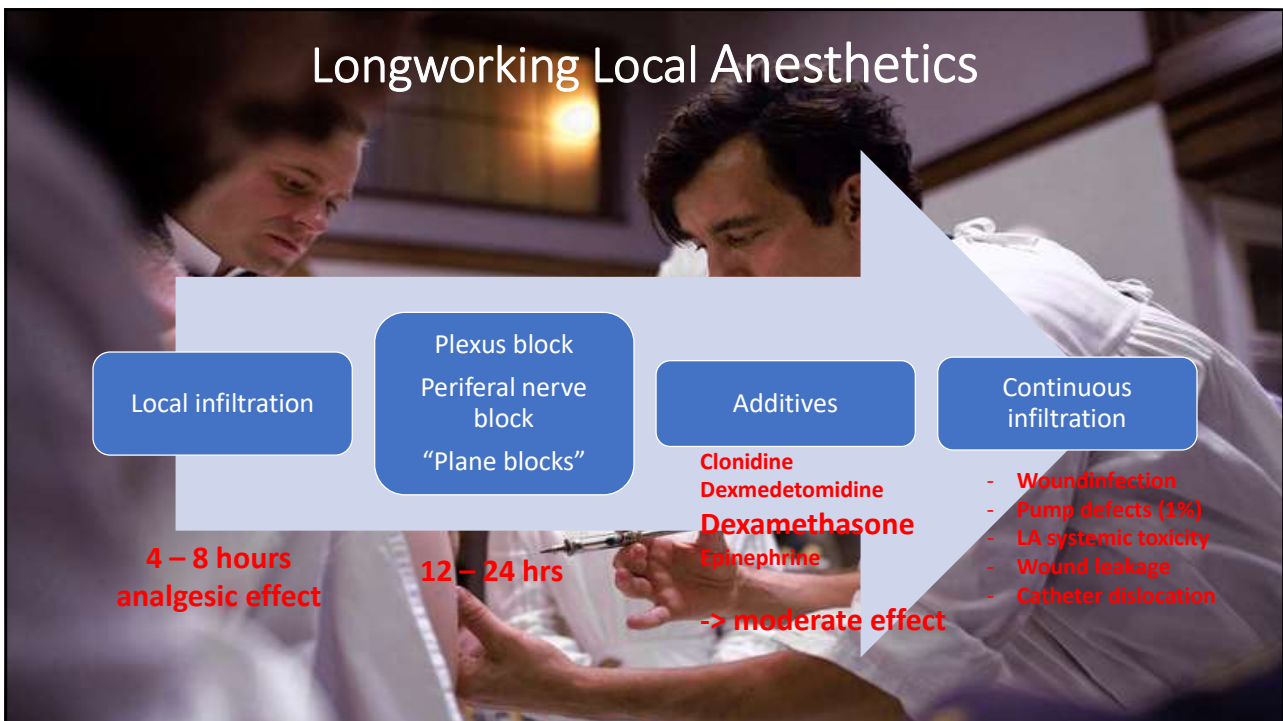
Alpha-2-agonists, Dexamethasone, (gabapentine)

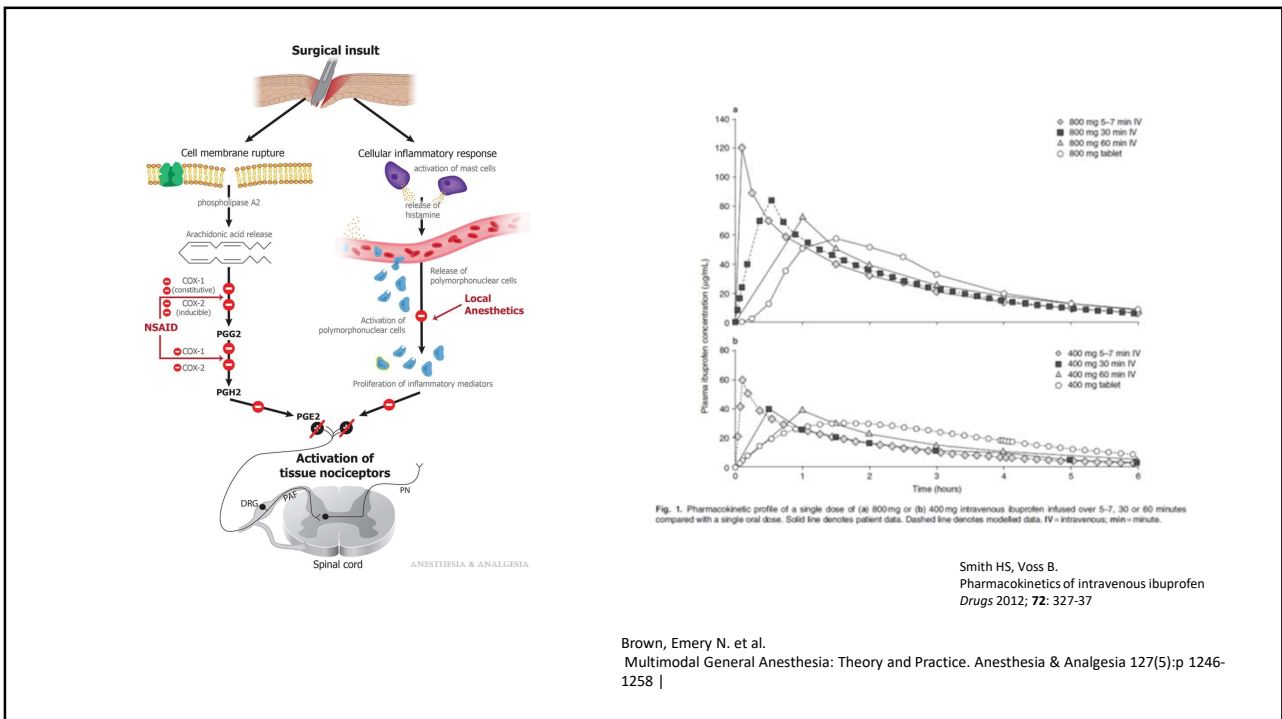
LA: local infiltration, nerve block

Postoperative ad home

Peroperative

Pain management in day-case surgery Liza Tharakan, Peter Faber, *BJA Education*, Volume 15, Issue 4, August 2015, Pages 180–183





Risk factors for persistent opioid use

- genetics
- prior history of opioid use or substance abuse,
- more painful surgical procedures,
- pre-operative or postoperative opioid dose and duration,
- underlying psychiatric disease, such as a history of depression
- extremes of age
- lower socio-economic status, lower educational level
- family history of substance-use disorder
- several of these risk factors overlap with risk factors for chronic postoperative pain.

clonidine vs placebo reduces

- analgesics consumption : 24%
- reduces nausea and vomiting : risk ratio 0.35
- improves hemodynamic stability (reduction of HR: 14.9 bpm, reduction of the MAP: 12.5 mm Hg, 1 min after tracheal intubation)
- prevents postoperative shivering: risk ratio: 0.17
- does not prolong awakening time

Sanchez Munoz MC, De Kock M, Forget P. What is the place of clonidine in anesthesia? Systematic review and meta-analyses of randomized controlled trials. J Clin Anesth. 2017 May;38:140-153

Dexamethasone at doses more than 0.1 mg/kg is an effective adjunct in multimodal strategies to reduce postoperative pain and opioid consumption after surgery.

- Lower pain scores at 2h and 24 h
- Less opioid use at 2h and 24h
- Longer time to first analgesic dose
- Shorter stay in PACU
- No increase in infection, delayed wound healing
- Higher glucose levels
- More perineal pruritus when pre-induction

De Oliveira GS, Jr., Almeida MD, Benzon HT, McCarthy RJ.
Perioperative single dose systemic dexamethasone for postoperative pain: a meta-analysis of RCT's.
Anesthesiology 2011; **115**: 575-88

BJA 2013

Dexamethasone

Corticoids in the right dose !!!

- Prevent postoperative nausea and vomiting
- Improve postoperative recovery
- Promote discharge after ambulatory surgery
- Prolongs duration of peripheral nerve blocks

PACMAN (Perioperative Administration of Corticotherapy on Morbidity and Mortality after Non-cardiac Surgery): no evidence of increased risk of surgical site or other infections or impaired wound healing; (0.2 mg/kg) at the end of surgery and the day after

PADDI trial (Perioperative Administration of Dexamethasone and Infection Trial) additionally showed safety of 8 mg of dexamethasone regarding surgical-site infection



Seeing the Forest for the Trees: Reconsidering Perioperative Gabapentinoids

Usage of gabapentin and pregabalin as part of surgical multimodal analgesia has become common, despite being an off-label indication. Verret *et al.*¹ performed a meta-analysis of gabapentinoids for acute postoperative analgesia.

261 randomized clinical trials included
24,682 patients

The primary outcome was postoperative pain intensity (100-point scale).

The minimal clinically important difference was defined as 10 points out of 100.

Results do not support the routine use of gabapentinoids for the management of postoperative pain in adults.

Verret M, *et al.* ANESTHESIOLOGY. August 2020.

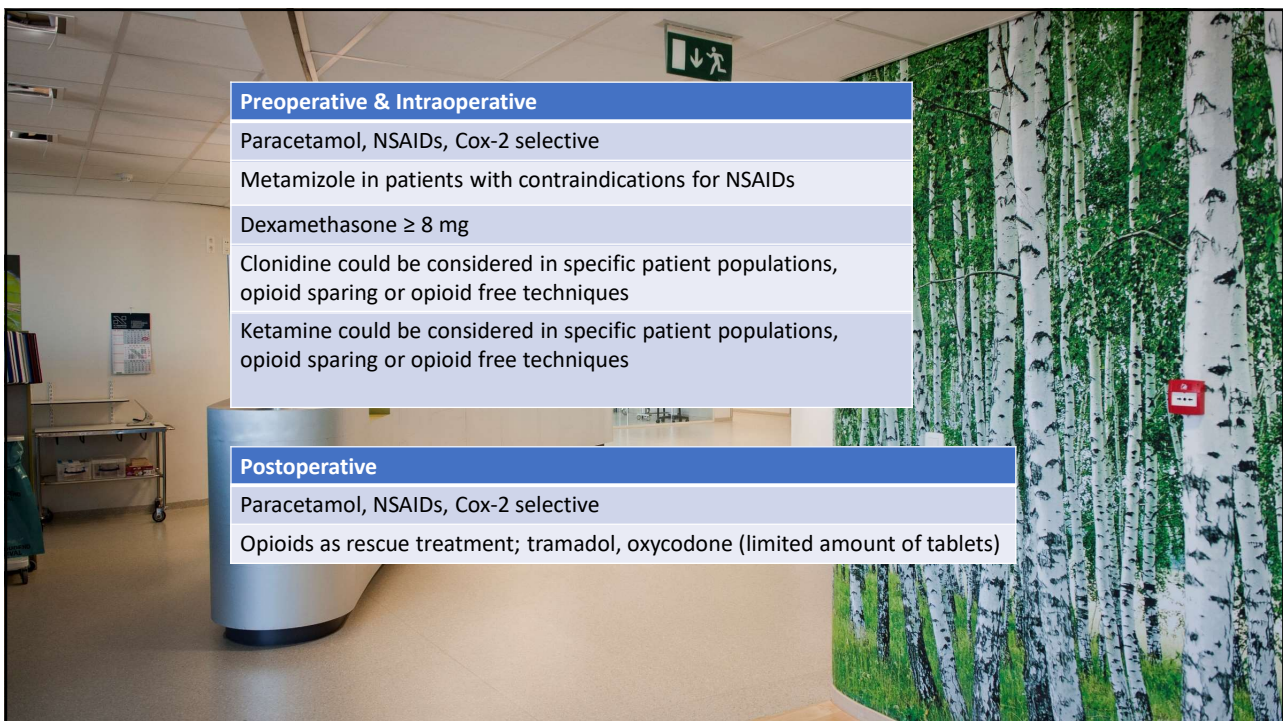
44% gabapentinoids did not have a clinically meaningful effect. The mean difference was -7 (95% CI, -8 to -6).

Adverse effects were more common, while PONV was reduced.

Gabapentinoids were associated with:

- More dizziness: RR 1.25 (95% CI, 1.12 to 1.39)
- More vision disturbances: RR 1.89 (95% CI, 1.53 to 2.33)
- Less PONV: RR 0.77 (95% CI, 0.72 to 0.82)

These results do not support routine use of perioperative gabapentinoids.

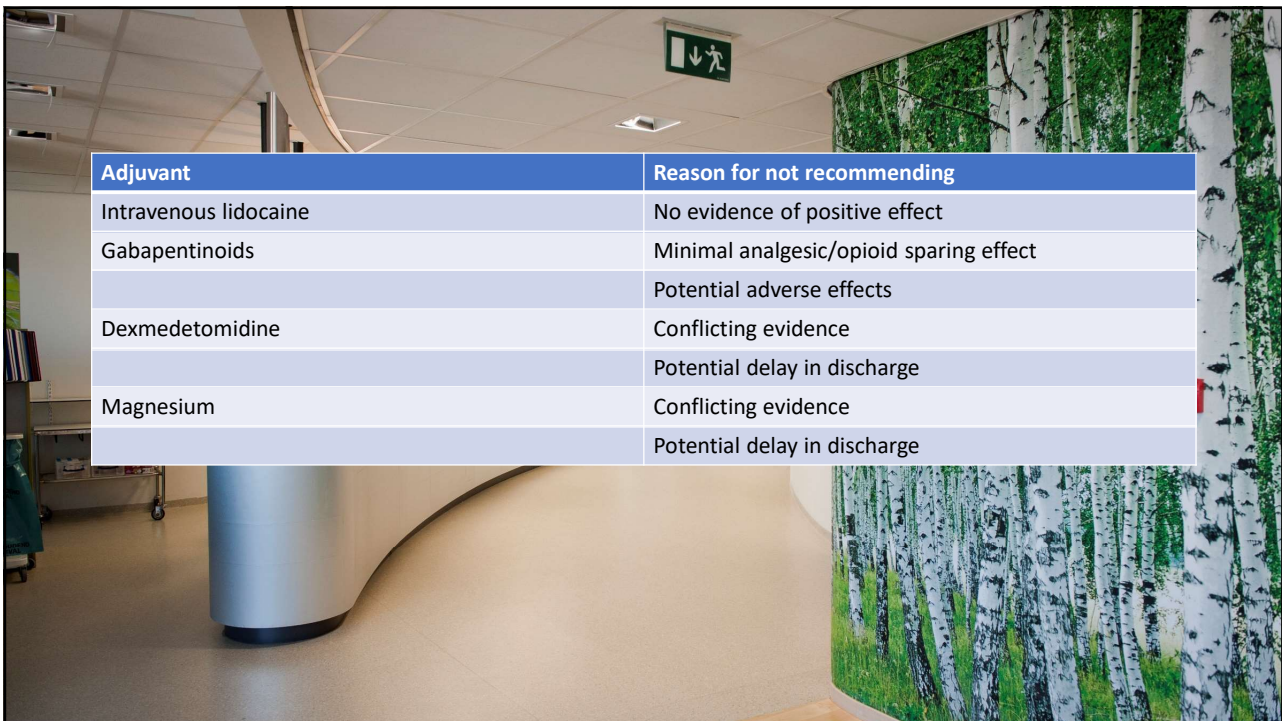


Preoperative & Intraoperative

- Paracetamol, NSAIDs, Cox-2 selective
- Metamizole in patients with contraindications for NSAIDs
- Dexamethasone ≥ 8 mg
- Clonidine could be considered in specific patient populations, opioid sparing or opioid free techniques
- Ketamine could be considered in specific patient populations, opioid sparing or opioid free techniques

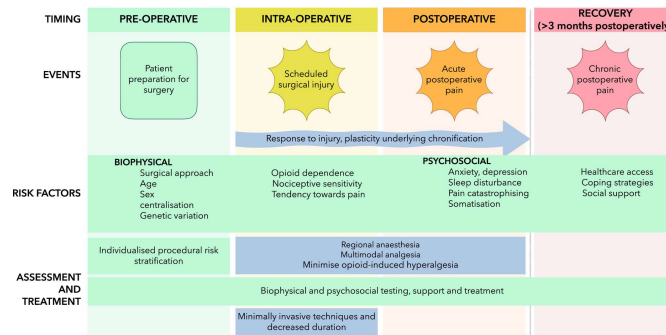
Postoperative

- Paracetamol, NSAIDs, Cox-2 selective
- Opioids as rescue treatment; tramadol, oxycodone (limited amount of tablets)



Adjuvant	Reason for not recommending
Intravenous lidocaine	No evidence of positive effect
Gabapentinoids	Minimal analgesic/opioid sparing effect Potential adverse effects
Dexmedetomidine	Conflicting evidence Potential delay in discharge
Magnesium	Conflicting evidence Potential delay in discharge

The role of regional anaesthesia and multimodal analgesia in the prevention of chronic postoperative pain: a narrative review



Anaesthesia, Volume: 76, Issue: S1, Pages: 8-17, First published: 10 January 2021, DOI: (10.1111/anae.15256)