

Acute pain guidelines for the perioperative use of Lignocaine, Ketamine & Magnesium

There is increasing evidence that perioperative use of these drugs can have beneficial effects in reducing post-operative;

- Hyperalgesia
- Allodynia
- Persistent Post-Surgical Pain
- Neuropathic Pain
- Peripheral & Central sensitisation

They can work via;

- Suppression of inflammatory mediators
- Augmenting descending inhibition
- NMDA receptor antagonism

The benefits can be direct or indirect (reduction in opioid use).

This guidance is only intended as an aide memoire for clinicians confident in the use of these drugs.

These techniques will not be appropriate for all patients and will be most successful if targeted at patients most at risk of challenging post-operative pain. Suggested patients will be;

- Surgery at a site of chronic pain
- Previous experience of poorly controlled pain
- Pre-existing Opioid dependence or tolerance
- History or current Substance abuse
- Requirement for Opioid-sparing technique—obese, OSA, elderly, and those with opioid side-effects
- Pre-existing Neuropathic pain

Lignocaine

Greatest benefit with abdominal/thoracic/pelvic surgery

Reduces pain scores (especially dynamic)

Decreases opioid consumption and can reduce post-operative ileus

Best results obtained when IVI continued up to 48hrs post-op.

- IV Bolus 1.5mgs/kg
- IVI @ 1-2mgs/kg/hr

Use Ideal Body weight

90% metabolised in Liver so use with caution in hepatic impairment.
Be aware of total local anaesthetic load if surgeon also administering local.

Do not use with epidural/paravertebral

Ketamine

Good level 1 evidence for reduction in;

- Post-op pain scores
- Time to rescue analgesia
- Opioid consumption

May reduce Persistent Postsurgical Pain

Neuropsychiatric complications more prevalent, although most related to chronic use. Greater benefit if IVI continued post-op

- IV Bolus 0.25-0.5mgs/kg
- IVI @ 0.1mgs/kg/hr

Magnesium

Level 1 evidence

- 1pt reduction in pain scores
- Mean opioid sparing of 30%
- Improved pain scores at 4-6hrs
- Mean opioid sparing 7.4mgs

Level 2 evidence

- Prolonged duration of spinal block and time to rescue analgesia
- Reduction in remifentanyl induced hyperalgesia & tolerance

Use with care in conjunction with muscle relaxants as Magnesium causes a dose dependent pre-synaptic inhibition of Ach release at neuromuscular junction

Magnesium can accumulate in renal failure

Evidence for synergy with Ketamine

Use ideal body weight

- IV Bolus 30-50mgs/Kg (0.12-0.20mmol/Kg)
- IVI @ 10mgs/Kg/hr (0.04mmols/Kg/hr)

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