ITAPS Surgery and perioperative pain management guideline for adult patients

University Hospitals of Leicester NHS
NHS Trust

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1. Introduction

Perioperative acute pain management is not always straight forward and following the WHO ladder of pain management is not recommended. Best practice in perioperative pain management requires evidence-based procedure specific pain management.

Opioid overprescription is part of the problem contributing to opioid crisis in western world and with this opioid stewardship is one of the ways to deal with this problem. Faculty of pain medicine published a guideline called Surgery and opioids in 2021 and as a reference we have produced this document to improve patient satisfaction with postoperative pain management.

This is reference guideline for the all the health care professionals' part of ITAPS who are involved in perioperative pain management in age 18 years and over, this includes anaesthetists, postoperative recovery nurses, acute pain team, chronic pain team.

2. Guideline Standards and Procedures

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I. Perioperative pain management for day case surgery

1. Preoperatively –

a. **Pre-operative assessment nurse** – Check for any pre-existing pain conditions and current analgesic medications including anti neuropathic medications and opioids. Flag chronic opioid patients to anaesthetist as deemed appropriate (e.g., patients on high dose opioids).

b. **Pre-operative assessment nurse** – Give pain relief after surgery leaflet or QR code for postoperative pain management (Appendix 3). Also, advice patient to continue their regular analgesics (if appropriate) till the day of surgery.

c. Explain that after discharge, pain relief will be mainly non opioid based (with an option of oral morphine as a rescue medication with limited supply for five days only).

d. Check patient's suitability for NSAIDs and identify patient with higher risk of adverse reaction or toxicity with opioids e.g., Patients on chronic opioids, elderly/frail patients, chronic kidney disease patients, High BMI patients.

e. Check if the patient has taken their regular analgesics on the day of surgery. If patient is on chronic opioids, refer to section 3a of this guideline.

f. Explain and offer regional analgesia as part of multi-modal anaesthesia/analgesia for peri-operative pain management.

g. Explain and document post operative analgesia options till the time of discharge of patient.

2. Intra-operatively –

a. Discuss the agreed perioperative pain management plan during team briefing.

b. Intraoperative pain management should include multimodal analgesia comprising regional analgesia and opioid-sparing analgesic techniques. See appendix 1 for options and doses.

c. Wherever possible, evidence-based and procedure-specific analgesic techniques should be used.

d. Perioperative pain management techniques must be tailored to individual patients.

e. Prescribe pain relief on Nervecentre day case protocol.

3. Postoperatively –

a. Pain relief should be optimised before leaving the Post-Anaesthesia Care Area (PACU).

b. Emphasis on functional pain assessment (that involves assessment of pain on breathing or movement) is recommended.

c. Contribution of psycho-social factors (such as anxiety) that can increase pain perception should be considered and addressed before administering additional analgesics.

d. Immediate-release opioids are preferred in the management of postoperative pain when simple analgesics such as paracetamol or NSAIDs are not effective enough to allow the achievement of agreed functional goals.

e. Advice on medicine self-administration: On discharge, patients must be advised how to self-administer medicines safely, wean analgesics, dispose of unused analgesic medications and of the dangers of driving/operating machinery while taking opioid medicines.

f. The dangers of mixing opioids with alcohol and other illicit drugs that increase risk of harm should be communicated. A patient leaflet should be provided to reinforce these messages. See appendix 2 – taking opioids for pain relief.

g. The hospital discharge letter must explicitly state the recommended opioid dose, amount supplied and planned duration of use. See appendix 4 for opioid discharge letter.

h. Advice to seek GPs help if patient still needs opioids after five days of discharge.

a.

II. Preoperative pain management for inpatient surgery

1. Preoperatively –

a. **Pre-operative assessment nurse** – Check for any pre-existing pain conditions and current analgesic medications including anti neuropathic medications and opioids. Flag chronic opioid patients to anaesthetist as deemed appropriate (e.g., patients on high dose opioids).

b. **Pre-operative assessment nurse** – Give pain relief after surgery leaflet or QR code for postoperative pain management (Appendix 3). And also, advice patient to continue their regular analgesic till the day of surgery.

c. Explain that after the discharge, pain relief will be mainly non opioid based with an option of oral morphine as a rescue with limited supply for five days.

d. Check the patient's suitability for NSAIDs and identify patient with higher risk of adverse reaction or toxicity with opioids e.g., Patients on chronic opioids, elderly/frail patients, chronic kidney disease patients, High BMI patients.

e. Check if the patient has taken their regular analgesics on the day of surgery. If patient is on chronic opioids, refer to section 3a of this guideline.

f. Offer regional analgesia techniques (including wound infusion catheter, regional nerve block catheter, fascial plane infusion catheter, epidural catheter, etc) for the first 48 to 72 hours as part of multimodal analgesia depending on the type of surgery.

g. Offer patient-controlled analgesia techniques for the first 24 to 48 hours with a plan for de-escalation.

h. Advice that opioids will be part of multimodal analgesia but will be limited to first five days of surgery.

i. Inability to de-escalate opioids needs review by the surgical/ward teams first before escalating to acute pain team as appropriate.

2. Intra-operatively –

a. Intraoperative pain management should include multimodal analgesia including regional analgesia and opioid-sparing analgesic techniques. See appendix 1 for options and doses.

b. Wherever possible, evidence-based and procedure-specific analgesic techniques should be used.

c. Perioperative pain management techniques must be tailored to individual patients.

d. Prescribe pain relief on Nervecentre inpatient protocol (with opioid prescription being limited to maximum five days or to be reviewed after 5 days).

3. Postoperatively –

a. Pain relief should be optimised before leaving the post-Anaesthesia -postoperative recovery - Care Area (PACU).

b. Functional pain assessment (an assessment that involves assessment of pain on breathing or movement) is recommended.

c. Contribution of psycho-social factors (such as anxiety) that can increase pain perception should be considered and addressed before administering additional analgesics.

d. Immediate-release opioids are preferred in the management of postoperative pain when simple analgesics such as paracetamol or NSAIDs are not effective enough to allow achievement of agreed functional goals.

e. Document clear pain management plan for the wards with de-escalation plan of opioids.

f. Document advice for wards about local anaesthesia catheters to be removed after 48 to 72 hours (or state duration if intended to keep longer).

g. If opioid de-escalation does not happen after 48 hours or if opioid requirements increasing or if unable to de-escalate opioids after five days of surgery, refer for ward /surgical team review.

h. Acute pain team could be contacted after ruling out reversible surgical causes and ensuring multimodal analgesia regime in place.

i. **Advice on medicine self-administration**: On discharge, patients must be advised on how to self-administer medicines safely, wean analgesics, dispose of unused analgesic medications and of the dangers of driving/operating machinery while taking opioid medicines.

j. The dangers of mixing opioids with alcohol and other illicit drugs that increases risk of harm should be communicated. A patient leaflet should be provided to reinforce these messages. See appendix 2 – taking opioids for pain relief.

k. The hospital discharge letter must explicitly state the recommended opioid dose, amount supplied and planned duration of use. See appendix 4 for opioid discharge letter.

l. Advice to seek GPs help if patient still needs opioids after five days of discharge.

III. Perioperative pain management in patients with chronic opioids – additional guidance

1. Preoperatively –

a. **In preassessment clinic** – a biopsychosocial assessment of pain should be done. This should include a psychosocial assessment and medication history, including analgesics, other sedative medications, psychiatric drugs, alcohol and illicit drugs.

b. Oral Morphine Equivalent dose (OME) should be calculated and documented in clinical records. Opioid tolerance is more likely to happen with doses above 60 mg of OME per day for ≥7 days.

c. Patients on OME > 120 mg per day should be considered for opioid de-escalation with referral to chronic pain clinic, if time permits. (Appendix 5)

d. Patient should be flagged up to anaesthetist on the list and to PACU (with a risk of unplanned admission in day case surgery). Seek pain team advice if requested by anaesthetist.

e. Anaesthetist to formulate perioperative pain management plan with the patient and communicated to the surgical and PACU team. The patient should be warned that the plan may occasionally need to be altered.

f. Important to reassure the patient that specific strategies will be in place to take care of that.

g. Buprenorphine patch can be continued but patient may need increased doses of opioids.

h. Consideration may be given to continue Fentanyl patch for procedures that doesn't involve risk of direct heating/raising temperature at the patch area with warming devices (leading to increased absorption).

2. Intra-operatively –

a. Intraoperative pain management should follow the principles of promotion of early functional return, i.e., drinking, eating and mobilisation.

b. PROSPECT (Procedure specific analgesic techniques) recommendations for analgesia should be used rather than over reliance on the WHO pain ladder.

c. Intraoperative pain management should include multimodal regimen including regional analgesia and opioid-sparing analgesic techniques. See appendix 1 for options and doses.

d. Titratable immediate-release opioids are preferred in the management of postoperative pain when simple analgesics are insufficient to achieve the analgesic goals.

e. Liquid oral morphine at a concentration of 10 mg/5ml is the preferred opioid as it is a Schedule 5 drug, which facilitates more timely administration. This may change with introduction of other titratable smaller dose preparations in the future.

f. Pain management techniques need to be individualised while considering patient's choice, type of surgery, co-morbidities and regular medications.

g. Prescription on Nervecentre can still use same protocol as for day case or in patient but may need modification depending on OME dose.

h. If the enteral route is unavailable immediately after surgery, opioid conversion should be made to parenteral morphine (Appendix 5). Please be aware of potential overdosing or underdosing (withdrawal) risk. Seek pain team help as needed.

3. Postoperatively -

a. Document functional pain assessment and optimisation of pain relief prior to leaving PACU.

b. Opioid tolerant patients may require additional interventions in PACU to facilitate optimal pain management. This may include additional nerve blocks or fascial pain blocks or adjunct therapy. These should be planned and documented.

c. Modification to PCA standard protocol may be required including consideration for a background infusion especially if enteral route is not available.

d. Continued elevated functional pain score should trigger further assessment and input from anaesthetist.

e. Sedation scores should be recorded in addition to respiratory rate to detect those at risk of opioid-induced ventilatory impairment.

f. HDU admission can be considered to optimise the pain relief for patients on high dose opioids (>120 mg OME).

g. Involve acute pain team if pain management is not optimum.

h. Aim to discharge patient on preoperative opioid dose (preferably on a reduced dose or with a weaning plan).

i. New prescriptions of modified-release opioid preparations (including transdermal patches) should be avoided without specialist consultation.

IV. Perioperative pain management in patients with chronic kidney disease – additional guidance

1. Opioids –
    a. Modified release opioids should be avoided as accumulation can happen due to slow elimination and thus leading to adverse effects.
    b. Consider reducing the dose of opioid prescribed and/or give opioids less frequently.
    c. Fentanyl PCA should be preferred over morphine PCA.
    d. Increase monitoring to identify clinical features of opioid accumulation (increased sedation, reduced alertness, and reduced respiratory rate)
2. Regional analgesia –
    a. Although platelet function is impaired despite having acceptable numbers, regional analgesia including nerve or fascial plane catheters is not contraindicated in CKD patients.
3. Multimodal analgesia should be considered but avoid NSAIDs.

V. Perioperative pain management in elderly/frail patients – additional guidance

1. Consider multimodal analgesia techniques including regional analgesia.
2. Opioids –
    a. Elderly and frail patients have reduced volume of distribution, so consider reducing the dose of opioid prescribed and/or give opioids less frequently.
    b. Be aware of increased risk of adverse drug reacting in this specific population due to cumulative effects with polypharmacy and increased central nervous system depression effects.
    c. If possible, avoid prescribing opioids. If definitely needed, then consider prescribing laxatives along with it.

VI. Perioperative pain management in high BMI patients – additional guidance

1. There is increased risk of airway obstruction with opioids.
2. At the time of pre-assessment, due consideration should be made about reduced reliance on opioids without compromising the pain relief.
3. Discuss multimodal analgesia techniques including regional analgesia.
4. Although regional anaesthesia techniques can be more challenging, they should be considered as part of multimodal analgesia.

VII. Opioid stewardship

Opioid stewardship (OS) is similar to antibiotic stewardship—consists of a range of risk reduction interventions or strategies, often used in combination to prevent adverse consequences (including misuse, abuse, and overdose) from prescription of opioids. The range of OS interventions or strategies includes the following:

1. Conduct an individualised assessment of risks and benefits of opioids, and appropriateness of a tapering; tapering slowly to minimise withdrawal symptoms.
2. Avoid co-prescribing opioids and benzodiazepines or other sedative drugs. Be mindful of cumulative harmful effects of co-administration of opioids and benzodiazepines.
3. Special opioid discharge letter or Treatment Agreements (TAs, also known as controlled-substance agreements or pain contracts)
4. Urine drug screening.
5. Prescription Drug Monitoring Programs or Audits.
6. Pain and functional assessment.
7. Registry of patients with chronic pain or patients on chronic opioid therapy.
8. Limiting days' supply for acute pain opioid prescriptions.
9. Pill counts to detect aberrant drug-related behaviour.
10. Referrals to non-pharmacologic treatment providers (e.g., physical therapy), pain management, behavioural health, or addiction specialists.
11. Referral to chronic pain or specialist opioid clinics for de-escalation of opioids.

VIII. Role of Acute pain team

1. Audit and clinical governance on adherence to pain management advice, guidance policies and safe prescription practices
2. Review and guidance on pain management of non-surgical patients (acute on chronic pain).
3. Review and guidance on post-operative pain management of patients with acute pain devices (PCA, epidural catheters, wound catheters, etc).
4. Advice and guidance on pain management of post-surgical patients who continues to be in pain after five days of surgery.
5. Advice and guidance on pain management of patients on chronic opioids.

IX. Preoperative referral to acute pain team and chronic pain clinic

I. For patients on OME (Oral Morphine Equivalent) dose of 120 mg or more per day and for those patients deemed at risk of developing chronic post-surgical pain, contact anaesthetist for the list and discuss perioperative pain management plan.

II. Seek advice from the anaesthetist regarding preoperative referral to acute pain team for perioperative management plan or to chronic pain clinic (if time permits) for a multidisciplinary approach to reduce opioids.

Appendix –

1. Opioid adjuncts for opioid sparing techniques

Drug	**Ketamine**	**Magnesium sulphate**	**Clonidine**	**Lignocaine**
Dose - bolus	0.1 to 0.5 mg/kg of ideal body weight administered over 2 to 5 minutes.	30 to 50 mg/kg of ideal body weight administered over 15 minutes.	0.5 to 2 micrograms/kg administered over 5 to 10 minutes.	1-2 mg/kg administered over 2 to 5 min half hour before surgical incision.
Dose Infusion	0.1- 0.5 mg/kg/hr for duration of surgery	8 -15 mg/kg/hr for the duration of operation.	0.3 to 1 micrograms/kg/hr infusion	1-3 mg/kg/hr Continued after surgery for Up-to 24 hours.
Key benefits	Opioid resistant pain	Reduce catecholamine release.	Supra-spinal, spinal effects	Reduced Chronic post-surgical pain.
Watch out for	Hallucinations	Muscle relaxant effect	Sedation	LA toxicity
Avoid in	Patients with history of psychiatric conditions (schizophrenia, delirium), and epilepsy (seizures). Patients with history of angina, ischaemic heart disease, and uncontrolled hypertension. Acute porphyria. Patients with hepatic failure.	Patients with chronic kidney disease (CKD). Not contra-indicated but Patients with renal insufficiency should receive 25-50% of the initial dose recommended for patients with normal kidney function. Patients with neuromuscular disorders (myasthenia		Patients with history of epilepsy (seizures) Patients undergoing extensive liver resection. Patients with hepatic, renal failure, CCF and heart block

	Severe coronary or myocardial disease Cerebral trauma or CVA/ Raised ICP	gravis, muscular dystrophies, etc). Patients with heart blocks (LBBB, tri-fascicular block, type IIb and III AV blocks).		

Note: The doses for morbidly obese patients should be adjusted according to the ideal body weight. Magnesium is not licensed as analgesic and may need an informed consent from patient.

2. **Taking opioids for pain leaflet – scan the QR code for link or see attached file**

3. **Perioperative pain management leaflet – scan the QR code for link or see attached file.**

4. Opioid discharge letter

DISCHARGE LETTER

- Must state opioid **dose**, **quantity** to be supplied (in number of millilitres or tablets) and planned **duration** of use – even for weak opioids.
- Box for "continue/review/stop" – select GP to continue – **NO.**
- **Maximum 5-7 days** as above but consider weekends/bank holidays and patient access to GP
- If a PPI is prescribed for GI protection while on NSAID's ensure it is stopped on discontinuation of the NSAID
- Opioid Patient information Leaflet to be provided to patient with discharge medicines (nursing staff/pharmacy).
- If concerns have been raised during this admission around patient's use of analgesia, please consider discussing with patient's GP.
- **Pharmacy only:** if TTO received from ANY ward requesting ≥ 7 days opioids and not for palliative care, please query.

5. Oral morphine equivalent dose calculator

Drug	Potency	Equivalent dose to 10mg oral morphine
Codeine phosphate	0.1	100mg
Dihydrocodeine	0.1	100mg
Hydromorphone	5	2mg
Methadone	*	*
Oxycodone	1.5	6.6mg
Tapentadol	0.4	25mg
Tramadol	0.1	0.1 100mg

* The relative potency of methadone depends on the starting dose and the duration of administration. Conversions to and from methadone should always be undertaken with specialist advice.

3. Education and Training

After the final approval and introduction of guideline regular presentation will be conducted in various meetings for training and awareness.

4. Monitoring Compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
Number of unplanned admission due to postoperative pain	Post operative unplanned admission audit	Day case lead	Yearly	
Number of acute pain team referrals	Acute pain team collects continuous data	Acute pain lead	Yearly	

5. Supporting References

1. Surgery and opioids 2021 guidelines by RCoA
2. N Levy, J Sturgess, P Mills. “Pain as the fifth vital sign” and dependence on the “numerical pain scale” is being abandoned in the US: Why?
3. S Ramaswamy, J Wilson, L Colvin Non-Opioid based adjuvant analgesia in perioperative care.

6. Key Words

Opioids, Perioperative pain, Chronic opioids, Non-Opioid adjuncts, Opioid discharge letter, Opioid stewardship

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