University Hospitals of Derby and Burton NHS Foundation Trust

Subcutaneous Opioids – Full Clinical Guideline

Ref No: CG-PM/2023/004

Purpose

This method of pain relief is applicable to most patients likely to require parenteral opioids for the treatment of Acute Pain. It is unsuitable for patients who are markedly oedematous, hypothermic or in shock (hypovolaemic, cardiogenic, septicaemic) because of uncertain absorption under these circumstances.

Aim and Scope

Opioids are as effective via the subcutaneous (S.C.) route as the traditional intra-muscular (I.M.) route. Repeated doses of drug can be given, via a subcutaneous cannula avoiding repeat I.M. injections, sited as instructed in 'The Royal Marsden Manual of Clinical Nursing Procedures (Ninth Edition) available on the Trust Intranet,.

A prescription and observation algorithm with a one-hour time period between doses should be used. This ensures that patients can receive additional analgesia to manage their pain without having to wait 4 hours between doses if appropriate.

Age reference in the guidelines highlights the possible pharmacokinetic effects on the actions of opioids in the elderly.

Consider patient's renal function and adjust dose and frequency if eGFR <60.

Choice of Opioid

The three opioids used for management of moderate to severe acute pain in UHDB are **Morphine**, **Oxycodone** and **Pethidine**.

Morphine: Morphine should be used as the first line agent. Morphine clearance is dependent on effective renal function and caution should be used in patients with acute or chronic renal dysfunction, with reduced doses and longer minimum times between doses.

Oxycodone: Oxycodone should be used as the second line agent in patients who are intolerant of morphine. This includes patients at significant risk of developing delirium or hallucinations, as well as those suffering nausea and vomiting resistant to antiemetics with morphine. Oxycodone is **more potent** than morphine (1.5x) and doses should be adjusted accordingly. Oxycodone is hepatically metabolised

so may be more appropriate in patients with poor kidney function, although caution is still advised.

Pethidine: Pethidine is available as a third line agent and may be more effective in cases of colicky pain including renal or biliary colic or bladder spasm.

Implementation

Guidelines for Medical Staff
Standard prescription to be calculated and prescribed as follows:

Morphine			**Oxycodone**		
DRUG	Morphine		**DRUG**	Oxycodone	
ROUTE	Subcutaneous		**ROUTE**	Subcutaneous	
DOSE	Proportional to age / weight		**DOSE**	Proportional to age / weight	
AGE	**MALE**	**FEMALE**	**AGE**	**MALE**	**FEMALE**
18-70	15 mg	10mg	18-70	10 mg	5-7.5mg
Over 70	10mg	5mg	Over 70	5-7.5mg	2.5mg
(Morphine 0.15 - 0.2 mg/kg)			(Oxycodone 0.1 - 0.15 mg/kg)		
FREQUENCY As guidelines ('As Protocol' on EPMA /V6)			**FREQUENCY** As guidelines ('As Protocol' on EPMA / V6)		

Pethidine	
DRUG	Pethidine
ROUTE	Subcutaneous
DOSE	Proportional to age / weight 1.5 mgs / kg
FREQUENCY As guidelines ('As Protocol' on EPMA /V6)	
NB Pethidine 100mg = 10mg Morphine (parenteral)	

Aim for pain score of 1 or 0 (mild or none)

- Score pain at rest, deep breathing and coughing using assessment criteria below as a guide.
- Assess sedation score using criteria below.
- Ensure regular administration of Paracetamol and, unless contraindicated, Non Steroidal Anti-Inflammatory Drug (NSAID). Ref. Trust Guidelines for the use of Non-Steroidal Anti-Inflammatory Drugs (NSAID's), for Acute Pain Management, in Adults (or current BNF)
- If respiratory rate falls below 8/min and/or sedation score P or U, Naloxone may be required: - Dilute with Normal Saline and administer in 100 microgramme increments. Seek urgent medical advice from on call Foundation Doctor (F1) or anaesthetist.
- Monitor progress i.e. dose, administration & evaluation – record in nursing notes.
- Reassess pain 60 minutes after administration of drug using flow chart (Appendix), and record observations on EWS/Patientrack.
- If pain is not relieved after two doses of opioid, you may need to increase the drug dosage or change route of administration.
- If having difficulty with pain control, contact the Acute Pain Team, during office hours or the on F1 or anaesthetist out of normal working hours.

Pain and Sedation scoring guidelines

PAIN SCORE	
No pain at rest No pain on movement	None 0
No pain at rest Slight pain on movement	Mild 1
Intermittent pain at rest Moderate pain on movement	Moderate 2
Continuous pain at rest Severe pain on movement	Severe 3

SEDATION SCORE	
A	Awake
V	Voice (The patient responds to voice)
P	Pain (The patient responds to painful stimuli)
U	Unresponsive

Observation Guidelines

If Pain Score is 2 or 3: - (moderate or severe)

- Check analgesia is prescribed 'As Protocol' on EPMA/V6.
- Check Sedation, Respirations and Blood Pressure are within guideline limits (as S/C Morphine /Pethidine Algorithm) and record on EWS or Patientrack
- Check 60 minutes has elapsed since last dose of s/c opioid analgesia
- Give analgesia as prescribed
- Reassess pain score in 1 hour and record evaluation in nursing notes
- If pain score is 2 or 3 repeat as above

References

Department of Health
National Service Framework for Older People
Standards 1 and 4

Galbraith A, Bullock S, Manias E, Richards A, Hunt B
Fundamentals of Pharmacology
Prentice Hall: London

Australia and New Zealand College of Anaesthetists and Faculty of Pain Medicine
Acute Pain Management Scientific Evidence. Fourth Edition 2015

The Royal Marsden Manual of Clinical Nursing Procedures
Available on Flo

Appendix

Subcutaneous Opioid Algorithm

Documentation Control

Development of Guideline:	Acute Pain Team
Consultation with:	
Approved By:	Anaesthetics – 01/12/2023 Acute Pain – 01/12/2023 Surgical Division – 19/12/2023
Review Date:	December 2026
Key Contact:	Acute Pain Nurse Specialists

Derby Teaching Hospitals NHS Foundation Trust

Acute Pain Service

Subcutaneous Opioid Algorithm