Bradford Teaching Hospitals NHS
NHS Foundation Trust

Local procedural document

Title: Acute pain management in those with long-term exposure to opioids

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Contents

1. Introduction

Acute pain management in patients who have been chronically exposed to opioids, either therapeutically or recreationally, may be difficult because of problems related to opioid tolerance, physical dependence and addiction.. This guideline offers some advice on managing acute pain in this group of patients.

Evidence relating to the perioperative management of the opioid-tolerant patient is limited and largely based upon case reports, case series and expert opinion.

2. Purpose/Scope

This guideline is intended for medical and nursing staff who may care for patients who are opioid tolerant.

3. Responsibilities

Those responsible for the prescribing, administration and monitoring of patients who are opioid tolerant, should read and understand this guideline.

4. Guideline/Procedure

Patients who have been chronically exposed to opioids, either therapeutically or recreationally, may exhibit tolerance, signs of opioid induced hyperalgesia, physical dependence and addiction. (See Appendix 1 for definitions). This can make managing acute pain in this group of patients challenging and often leads to them receiving poor pain management.

These patients require analgesia for acute *and* chronic pain *and* sufficient opioids to prevent any withdrawal effect. The best practice is to continue with any long-term, sustained release, strong opioid during the peri-operative period and add to this **PCA**, **Epidural** or **PRN** medication to cope with the additional acute pain. The sustained release preparations commonly used are MST (Morphine Sulphate Tablets), oxycodone prolonged release (PR) and fentanyl or buprenorphine (see below) patches.

The approach to each of these strategies is detailed below but it is important that patients receive regular 6hrly paracetamol (IV, PR, PO) and NSAIDs if not contraindicated.

The use of local anaesthetic techniques such as regional anaesthesia, nerve blocks and infiltration should be maximised.

If the patient's pre-operative pain is reduced/relieved by surgery or the local anaesthetic technique used, you may need to reduce the existing long-term opioid dose during the post-operative period. Patients whose pain is completely ablated require only 50% of their pre-operative oral opioid dose to prevent withdrawal.

Some of the techniques will require calculation of the patient's 24hr oral morphine equivalence, which is shown below. Details on opioid equivalence are also available in the trust's ***Adult Opioid Guideline*** on pages 18 and 19. Link to Opioid guideline

For patients with a significant tolerance to opioids the PCA bolus or PRN opioid dose may have to be adjusted (see below).

Patients may present with implantable intrathecal pumps. The manufacturer's advice is to continue with these devices unaltered and consider this to be the long-term, sustained release, pre-operative opioid. Therefore PCA or PRN medication can be prescribed as appropriate. Dr Swanepoel is the only chronic pan specialist now working at the BRI who manages patients with IT pumps. Please discuss any issues you may have in such patients with him.

Buprenorphine: A partial opioid agonist used in the chronic pain setting and to treat opioid substance abuse disorders. It may prevent effective analgesia with strong opioids and if discontinued conversion to another opioid is required, which itself can be difficult. Most practitioners continue with buprenorphine and use multimodal analgesic strategies.

Calculating a patient's 24hr oral morphine equivalence

Convert each opioid to its oral morphine equivalence using the information below, and then summate to calculate the patient's 24hr oral morphine equivalence.

These oral doses are equivalent to **10mgs oral morphine**

- Codeine 60mg
- Tramadol 50mg
- Oxycodone (i.e. oxynorm and oxycontin) 5mg
- Morphine IM 5mg

Transdermal medications

- Fentanyl patch 25mcgs/hr is roughly equivalent to 90mgs oral morphine/24hrs
- Buprenorphine patch 35mcgs/hr is roughly equivalent to 60mgs oral morphine/24hr

Attempts to calculate oral morphine equivalence for drug addicts using “street opioids” is notoriously difficult with no standard to compare drug dose. Addicts may also use it as an opportunity to secure increasing amounts of opioids. The only safe way to proceed is to assume these patients are opioid naïve and prescribe standard doses. As with opioid dependent patients local anaesthesia and non-opioid analgesics should be maximised. The standard regime can be easily changed by the acute pain team in response to a demonstrated opioid requirement in the post operative period.

Epidural and/or spinal opioids

If oral opioids are continued, as recommended, the epidural infusion should be **plain bupivacaine only** and no intrathecal opioids should be used.

ORAL PRN OPIOID MEDICATION (e.g. oramorph or oxycodone immediate release)

If analgesia is to be provided via the oral route, continue with long-term, sustained release opioid and prescribe the compatible formulation for breakthrough pain. For MST and fentanyl or buprenorphine patches this would be oramorph, for oxycodone prolonged release (PR) (or oxycontin) this would be oxycodone immediate release (IR) (or oxynorm). To calculate the oral morphine dose required to treat severe breakthrough pain divide the patient’s 24hr oral morphine equivalence by 8.

E.g. Total oral morphine 24hr equivalence 240mgs
Divide by 8 for the oramorph dose 30mgs
Further divide by 2 for the oxycodone IR dose 15mgs

Prescribe “oramorph 30mgs 2-3hrly for severe breakthrough pain”
Or “oxycodone immediate release (oxynorm) 15mgs 2-3hrly for severe breakthrough pain”

PCA Opioid – Morphine or Oxycodone

Continue with long-term, sustained release opioid and add PCA. The bolus should be adjusted according to the table below. It is always safer to start with a lower dose. This can be increased if analgesia is inadequate. The lockout time should not be altered as time to peak plasma concentration is the same. We do **NOT** currently use background infusions, and our PCAS pumps do not allow one to be programmed.

24hr Oral Morphine Equivalence	PCA Bolus Dose
0-180 mgs	1 mg
181-270 mgs	1.5 mgs
271-360 mgs	2 mgs
>360 mgs	2.5 mgs

Converting back to oral opioids from IV PCA

This situation will normally be dealt with by the acute pain team but the basic idea is to calculate the patients 24hr oral morphine requirements and to provide 75% of this as a sustained release opioid preparation with the compatible formulation for breakthrough pain.

Drugs used in the treatment of Substance Abuse Disorders (SAD)

The specific drugs used to treat SAD can cause unique problems over and above the psychological and behavioural characteristics of these patients.

Methadone A long-acting pure opioid agonist. This should be continued at the same dose, where possible, throughout the acute pain period. If discontinued substitute opioids should be considered.
NB. Methadone when administered daily, as is normal practice when it is used as part of a Methadone Maintenance Program (MMT), will not provide useful analgesia. This is because it has a duration of action as an analgesic of only 6 to 8 hours. It will prevent the onset of withdrawal (the reason it is used as MMT) for at least 24 hours, and maybe much longer.

Naltrexone An oral, pure opioid antagonist which binds to opioid receptors for 24hrs to 72hrs. Used in the treatment of opioid and alcohol SAD it can create profound difficulties in the acute pain setting. As well as blocking the effect of strong opioid agonists, abrupt withdrawal can lead to a period of increased opioid sensitivity. Therefore naltrexone should be stopped for > 24hrs prior to elective setting and opioid sensitivity should be anticipated in the post operative period.

Buprenorphine (Subutex and Suboxone – the latter is a combination of buprenorphine and naltrexone) When used for treatment of SAD buprenorphine is used sub-lingually (SL) and often at very high doses; milligram doses rather than microgram doses. Up to 32 mg/day may be used and would be expected to block, or significantly reduce, the effects of any additional opioid agonists. When given daily in this way it will not provide useful analgesia. This is because, in a similar way to the situation with methadone described above, it only has a duration of action as an analgesic on about 8 hours, whereas its duration of action as part of a treatment program for SAD will be days, rather than hours.

Appendix 1

Definitions

- **Tolerance**

Tolerance to a drug describes a situation when after repeated administration of a drug there is a decrease in response to a given dose, which can be overcome by an increase in dose. In relation to opioid tolerance, tolerance can occur to both therapeutic uses (analgesia) and side-effects (respiratory depression, nausea, sedation).

- **Opioid Induced Hyperalgesia (OIH)**

OIH implies an enhanced response to a stimulus that is normally painful, which results in an increase in pain sensitivity. There is usually a reduction in the analgesic effect of administered opioid. Increased sensitivity to pain has been demonstrated in patients on opioid maintenance therapy with methadone or buprenorphine.

The reduced response to opioid administration seen in those chronically exposed to opioids may, in fact, be a result of both tolerance and OIH.

- **Dependence**

Physical dependence on a drug describes the situation when a drug is abruptly stopped, reduced in dosage or antagonised, and a drug-specific withdrawal syndrome occurs. This does not imply addiction.

- **Addiction**

Addiction is a primary, chronic, neurobiological disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterised by behaviour that includes one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and drug craving.

Selected References

Acute Pain Management: Scientific Evidence 4th Edition 2015. Australian and New Zealand College of Anaesthesia, Faculty of Pain Medicine.

Huxtable CA, Roberts LJ, Somogyi AA, Macintyre PE. Acute pain management in opioid-tolerant patients: a growing challenge. *Anaesth Intensive Care 2011;* ***39:*** *804-823*

Mehta V and Langford R. Acute Pain Management in Opioid Dependent Patients. *Reviews in Pain. 2009 October 3 (2): 10-14*

Alford DP, Compton P and Samet JH. Acute Pain Management for Patients Receiving Maintenance Methadone or Buprenorphine Therapy. *Ann Intern Med*. 2006 January 17; 144(2): 127–134

Wu CL and Casey ZA. Managing postoperative pain in the opioid-tolerant patient. *Journal of critical illness* 2002; 17(11): 426-432.

Carroll IR, Angst MS, Clark JD. Management of perioperative pain in patients chronically consuming opioids. *Regional anaesthesia and pain medicine* 2004; 29(6): 576-591.

Risk Management

During the introduction of these guidelines we propose the following limitations;

Continuation of long-term opioids

Patients on long term sustained release opioids should continue as above, this should be clearly prescribed on the drug chart and indicated on the acute pain management chart. This is not a change in practice but should help to clarify the situation.

If the prescribing doctor is at all unsure about the correct management of a patient they must contact a member of the acute pain team for assistance.

Appendices

If there are forms or pathways that will be used separately to the policy and they are not produced by medical illustration they should have the box below in the bottom right hand corner

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