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Royal Cornwall Hospitals NHS Trust

Peri and Post-Operative Pain Control for Complex Pain Patients Clinical Guideline

V2.0

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Summary

This guideline is to provide a framework for managing complex pain patients in the peri and post-operative setting.

Complex pain patient may require deviation from normal protocols and use of alternative pain relief medication or interventions. This guidance provides advice on the following:

- Identification of Complex Patients

- Use of Medications
    - Ketamine
    - Clonidine
    - Adjuvant Drugs:
        - Antidepressants
        - Anti-neuropathic agents
        - Membrane Stabilisers (Lignocaine)
        - Calcitonin
        - Cannabinoids
        - Glucocorticoids
        - Bisphosphonates

- Alternative Techniques
    - TENS
    - Acupuncture
    - Regional Anaesthesia

- Opioid prescribing in the opioid tolerant patient

1. Aim/Purpose of this Guideline

1.1. The purpose of this guideline is to provide anaesthetists with a framework to identify and care for those patients who have complex analgesia requirement peri-operatively.

1.2. This version supersedes any previous versions of this document.

1.3. **Data Protection Act 2018 (General Data Protection Regulation – GDPR) Legislation**

The Trust has a duty under the DPA18 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed and documented. We can't rely on Opt out, it must be Opt in.

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2. The Guidance

2.1. *Identification*

2.1.1. It is critical that patients with complex pain needs are identified prior to surgery as these patients do better post operatively if they are reviewed pre operatively, the analgesic alternatives discussed fully and a plan agreed.

2.1.2. In 2009 a multidisciplinary UK expert panel met to define and agree a practical framework to encourage implementation of the numerous guidelines and fundamentals of pain management at a local level.

2.1.3. This is particularly pertinent in the complex needs patient where effective management requires an educated, well informed approach utilizing appropriate analgesic options with an understanding of potential long term problems such as chronic post-surgical pain if acute post-operative pain is not adequately treated.

2.1.4. The term 'complex' would refer to the following patients:

- Complex surgery including large dermatomal spread or 2 or more sites
- Previous poor experience of pain relief
- High risk of neuropathic pain (Hernia, Breast, already painful limb)
- Established chronic pain syndromes
- Significant anxiety or depression of patient and immediate family
- Long term opioid therapy for the current condition or other problems

- Previous drug addiction problems and patient desire to avoid opioids
- Severe reaction to specific opioids including severe PONV and allergies

2.2. *RADAR Approach*

This describes five steps as part of an on-going process requiring a regular review of each or any of the 5 parameters.

- **Responsibility** – Involvement of the whole team and clarity of roles for delivery of analgesia by appropriately trained staff.
- **Anticipation** – Pain should be anticipated wherever possible and complex, at risk patients recognized.
- **Discussion** – Peri/post-operative plan should be discussed and shared with all team members with particular regard to management of adverse events. Treatment goals and options should be discussed with patients.
- **Assessment** – Pain should be assessed regularly '5th vital sign' with standardised tool used throughout the hospital.
- **Response** – Should be rapid, and appropriate analgesia administered based on quick absorption to have fast effect, using multimodal approach to minimise side effects.

2.3. *Pain Terms*

2.3.1. **Nociceptive** – Stimulation of specialized sensory receptors known as nociceptors in response to noxious stimuli. They are distributed throughout the body (hence site specific) and can be stimulated by mechanical, thermal or chemical injury.

2.3.2. **Neuropathic** – Spontaneous or abnormal stimulus evoked pain with specific characteristics of burning, shooting, stabbing pain, often non dermatomal (or site specific), to include:

- Allodynia - Pain evoked by normal, usually innocuous, stimuli
- Hyperalgesia - Increased pain intensity evoked by normally painful stimuli

2.4. *Identification*

2.4.1. It is an increasing problem that patients are not seen until day of surgery which means aspects of pain relief may not have been fully identified or discussed. If complex pain issues are anticipated then a face to face pre-operative assessment with an anaesthetic consultant may be appropriate.

2.4.2. It would be expected that general information on available methods of post-operative pain relief be given at pre-operative assessment.

2.4.3. If a patient has been identified at pre op assessment as presenting potential risks, there is still a problem of varying anaesthetic approaches which cannot be absolutely predicted by the pre op assessment team and therefore the pre-operative discussion and agreement is still critical on the day of operation.

2.4.4. All patients should have had the appropriate RCHT leaflet pre-operatively – 'Pain After Surgery'

2.4.5. If a problem is sufficiently concerning, then all attempts should be made to contact the individual anaesthetist for that particular list in advance to alert them or / and to ask for specific advice.

2.4.6. If possible any post-operative plan should be made in conjunction with the ward and surgeon with input from the acute or chronic pain team if necessary and arrangements for appropriate environment to provide the care made (e.g. HDU etc).

2.4.7. Whilst the acute pain team is available 09:00 – 17:00 hours each weekday, it is primarily nurse led, and whilst their remit is to ensure delivery of the prescribed post-operative pain relief and following the agreed peri-operative plans, it should not be expected that they assume prescribing responsibility pre or post operatively. Specific advice can be sought from the consultants involved in the acute and chronic pain service. The acute/inpatient pain team can be contacted on bleep 3323.

2.5. *Issues which should be discussed pre operatively:*

2.5.1. That a plan will be drawn up for them for staff to follow, and that an alternative plan will also be given in case of failure or potential problems with original plan (e.g. leaking / ineffective epidural).

2.5.2. This plan will have been documented clearly in the notes so that both ward staff and pain nurses can follow.

2.5.3. Depending on the plan, they should be in appropriate ward settings to provide this, with the correct level of monitoring to ensure safe delivery by experienced staff.

2.5.4. That the expectation will be for mobilization and conversion to oral analgesia as soon as possible.

2.5.5. Expectations – that they may have some mild discomfort and potential bloating, and wind, but should not suffer acute, sharp pain or any pain that would distress them. Using Pain scores 0-4 – an expected or acceptable level would be 1).

2.5.6. Where there are large opioid needs prior to surgery, a plan to restart these post operatively when oral fluids will be tolerated should also be discussed, and the opioid bridging arrangements prior to this outlined.

2.5.7. e.g. use of PCA with background infusion equivalent to daily opioid intake prior to surgery. Background opioid infusions should not be prescribed for opioid naïve patients, and should only be prescribed in complex pain patients after discussion with the acute pain team.

2.5.8. If a large background infusion (>1ml/hr) is required or larger bolus

doses then the patient should be in a central bay or HDU for monitoring.

2.5.9. Types of pain relief available and the advantages of the multimodal approach i.e. local anaesthetic block, opioids and adjuvant drugs (NSAID's, paracetamol) and the advantages of a combined approach – which should include the use of local blocks.

2.5.10. Some patients may decline the use of epidural analgesia if performed whilst they are awake; it is the decision of each anaesthetist on the acceptability of the theoretical, but currently not quantified, increase risks of sedation or event anaesthesia to perform this block versus the increased post-operative pain and consequent risks may be justified and explained to the patient. The level of epidural insertion required and the experience of the anaesthetist will be an important factor in this decision.

2.5.11. The potential addition of the pain specific drugs both pre operatively (pregabalin, gabapentin), peri-operatively (ketamine) and post operatively (e.g. ketamine, addition of clonidine to epidurals for neuropathic pain) and the potential need for anxiolytics. Where there are potential side effects from the drugs – sickness, mild hallucinations, these should be mentioned but in context to the potential small doses being used and that there would be monitoring to spot early signs and preventative measures taken.

2.5.12. Whilst we should share potential risks and benefits of different techniques we should always attempt to direct the patient choice towards the best method for their particular kind of operation. The more commonly utilised methods with which the wards are familiar should usually be considered first i.e. local block and opioid, NSAID and paracetamol before employing the other choices.

2.6. *Pre-Operative Priming*

2.6.1. Ideally the needs should be recognised at pre-op assessment for severe cases when discussion should occur re pre-operative priming with secondary analgesia – prescribed for night before and morning of operation as well as the more usual **NSAID's** and **paracetamol**.

2.6.2. Consideration should be given to discussing goals and expectations in the very complex cases with the patient, and investigating the possibility of access to psychological (eg Cognitive behavioural therapy) input prior to surgery.

2.7. *Suggested Drugs Include:*

2.7.1. Secondary Analgesics

E.g. Pregabalin – 300mg or **Gabapentin** 600mg. (normal adult 45-110kg) (n.b. whilst amitriptyline is also a secondary analgesic it may require longer to have an opioid sparing effect).

2.7.2. It may be that in conjunction with the pre-operative assessment clinic that after identification of an at risk complex pain patient an analgesic

plan could be formulated and outlined in the pre-op assessment letter. It may be appropriate for certain patients to be admitted to hospital the day before surgery to commence an analgesic plan, although evidence supporting this approach is limited.

2.7.3. Patient should be warned that mild side effects may rarely occur for a single dose and they would commonly be: sleepiness, a dry mouth, mild headache and possible nausea.

2.7.4. Anti-emesis should be given pre-operatively to decrease the risk.

2.8. *Anxiolytics*

2.8.1. Can be given pre-operatively if thought helpful – often **Lorazepam** can be a suitable drug if there is no immediate bed for the patient – 1-2mg 1-2 hours pre operatively when the patient will not be unduly drowsy or needing to lie down.

2.8.2. If a bed is available **Temazepam** may be the drug of choice – 20mg.

2.9. *Ketamine – NMDA Receptor Antagonist*

2.9.1. Rationale for Use:

2.9.1.1. NMDA (N methyl D aspartate) receptor and ion channel complexes are sited both peripherally and centrally within the nervous system: activation of receptors may increase nociceptive pain leading to an increase in central sensitivity of nerves.

2.9.1.2. Ketamine is an NMDA receptor non-competitive antagonist and will act as an ‘anti-allodynic’ and ‘anti-hyperalgesic’ drug as well as potentially decreasing opioid tolerance.

2.9.1.3. Ketamine should only be used as an adjuvant in acute pain control in a low dose with appropriate monitoring when other medications have been ineffective or in known opioid tolerant patients.

2.10. *Pre and Post-Operative Use of Ketamine*

2.10.1. Ketamine may be used in priming, de-sensitisation doses prior to induction (25-50mg), or can be used in its oral form, intranasal or intravenous route post operatively in cases where there may be issues with pain control for the first 48 hours post operatively.

2.10.2. The bioavailability of ketamine depends on its route administration:

- IV-100%
- IM and SC-90%
- Sublingual 30% and Intranasal-45% peak plasma level achieved 30 mins
- Oral-20% - peak plasma level at 120 mins (can be used direct from vial or diluted to chosen flavour, with maximum dose being 200mg per day)

2.10.3. Ketamine preparations: 10mg/ml, (20ml vial) 50mg/ml (10ml vial) and 100mg/ml (10ml vial).

2.10.4. Where oral or intranasal or sublingual ketamine is used specific vial may be used more than once for single patient only use.

2.10.5. Ketamine is controlled under 'The misuse of Drugs act 1971 (Schedule 4, Part 1, Class C) 'and as such is subject to the Misuse of Drugs Regulations.

2.10.6. The drug should be prescribed appropriately on EPMA in both words and numerical value of milligrams with clarity of concentration.

2.10.7. The drug should be checked in the appropriate way in line with Hospital Policy for controlled drugs and appropriately recorded in the controlled drug book.

2.10.8. If administered intravenously the drug should be in a specific diluent which is clearly labelled and in a locked pump with a separate infusion set with an anti-syphon and anti-reflux line, ideally with a dedicated venous line to avoid bolus doses.

2.10.9. Keys to the ketamine lock box should be with the controlled drug keys.

2.10.10. Guidelines to administration and monitoring should be followed as per specific ketamine for post-operative pain relief guideline.

2.10.11. The drug should be used in conjunction with other analgesia such as paracetamol, NSAID's (if suitable), local anaesthetic blockade or infusions and opioids, to achieve a pain score of 1 or 0.

2.10.12. N.B. There is no advantage in combining ketamine with an opioid in a PCA as this may increase risk of hallucinations and deliver a very variable dosage.

2.10.13. <u>Contra Indications:</u>

- Ketamine has the potential to increase blood pressure and raise intracranial and intra ocular pressures and should be avoided or used with considerable caution in the following:
- Known Ischaemic heart disease
- Hypertension/previous CVA's
- Epilepsy
- Cerebral tumours – primary or secondary
- Raised intra ocular pressure (e.g. glaucoma)
- Previous psychotic history or history of psychosis and hallucinations.
- Known allergy

2.10.14. Side Effects

- Dysphoria, confusion or hallucinations
- Sedation
- Nausea
- Unusual to depress respiration and other causes should be excluded before attributing this to ketamine
- Excessive salivation

2.11. *Ketamine Infusion*

2.11.1. This should be delivered via the especially adapted McKinley pumps clearly labelled for intravenous analgesic use only via the specific giving sets to avoid confusion. The infusion range is from 1 – 5 mls/hr with dose range required usually from 0.1 – 0.5mg/kg/hr.

2.11.2. The infusion used consists of 500mg Ketamine in 100mls N Saline (5mg/ml).

2.11.3. Suggested Mixture:

- 100ml 0.9% N Saline with 500mg of Ketamine giving a concentration of 5mg/ml.
- If the infusion is run at 2ml/hr (i.e. 10mg/hr) this would deliver 0.14mg/kg/hr for a 70kg patient
- If the infusion is run at 5ml/hr (i.e. 25mg/hr) this would deliver 0.35mg/kg/hr for a 70kg patient.

2.12. *Intravenous Ketamine 5mg/ml-Infusion Rates*

2.12.1. The infusion rate should not be increased more frequently than hourly and should never exceed 5ml per hour.

2.12.2. Rate should be started at 1ml per hour. Pain scores together with BP, pulse and respiratory rate regularly assessed initially hourly for first 4 hours or until pain scores are satisfactory.

2.12.3. The infusion rate should be clearly recorded on the NEWS chart.

2.13. *Monitoring and Precautions*

2.13.1. Patients receiving Ketamine infusions will normally be receiving opioid therapy – usually in conjunction with epidural or PCA and will be undergoing the routine observations expected for opioid administration as such.

2.13.2. In addition close observations should be made hourly for dysphoric reactions, confusions or hallucinations when it would be expected that the infusion should be stopped.

2.13.3. Monitoring of pain scores is essential at this stage to assess rate of administration.

2.14. *Actions Required for Problems:*

2.14.1. Hypotension and Depressed Respiratory Rate – Unlikely to be Ketamine related, exclude all other causes prior to stopping infusion. If hypotension persistent and systolic pressures are less the 90mmHg then follow algorithm on MEWS chart and call for medical assistance.

2.14.2. Sedation – May be caused by Ketamine, if score greater than 2, stop infusion and call for assistance, if combined with opioid infusion consider naloxone.

2.14.3. Nausea – Give regular antiemetic and if persistent PONV after 2 drugs consider addition of dexamethasone. Avoid the use of neuroleptic drugs such as Droperidol or chlorpromazine.

2.14.4. Poor Pain Relief – If Ketamine infusion fails to help the pain do not exceed recommended rate of infusion but exclude other reasons for severe pain e.g. surgical, tissued IV or malfunctioning epidural and call for advice from Acute Pain Team or on call anaesthetist.

2.15. *Period of Administration of Ketamine*

2.15.1. It would not be expected that Ketamine be used without involvement of the Acute/Inpatient Pain Team. It would be usual that it not be used for longer than 2 days unless discussed with a member of the Acute Pain Team.

2.15.2. Needs should be reviewed daily by the Acute/Inpatient pain team.

2.15.3. Should it be felt of benefit to the patient to continue to receive Ketamine then conversion to oral or intranasal form should be considered – 25mg qds – the patient may still be nil by mouth but this is a small volume and would be tolerated orally.

2.16. *Use of Peri and Post-Operative Clonidine*

2.16.1. Rationale for Use

- C fibres which correlate with sympathetic nerves are implicated in pain.
- Preganglionic fibres enter the sympathetic chain where they synapse with a postsynaptic fibre causing the release of noradrenaline into the synaptic cleft.
- The action of noradrenaline is terminated by outward diffusion, metabolism by Catechol-O-Methyl transferase or re uptake into nerve ending where it is inactivated by Monoamine Oxidase.
- Feedback inhibition by noradrenaline on its own release from presynaptic nerve terminals is effected by alpha 2 adrenoreceptors on the presynaptic membrane and prevent further release of noradrenaline

and hence further increase in pain.

- Clonidine is an alpha 2 agonist and will prevent further release of noradrenaline at pre synaptic nerve terminals.
- Clonidine was originally used as an antihypertensive drug in the 1950s and has only in the last 30 years become accepted as useful in the treatment of neuropathic type pain and for other conditions.
- Its alpha agonist action on receptors in the brain can cause decreased cardiac output and peripheral vascular resistance to lower BP and lowers sympathetic tone by action on the presynaptic alpha 2 receptors in the vasomotor centre in the brainstem to decrease calcium levels and inhibit further release of noradrenaline to give a net decrease in sympathetic tone.

2.16.2. Use of Clonidine Peri-operatively

2.16.2.1. Intrathecal (Spinal) Use

- Clonidine can be added to an intrathecal injection of local anaesthetic and opioid when its central effects will prolong the effects of the local anaesthetic and opioid.
- Doses in the range of 15-25mcg are used but sedation, hypotension and urinary retention are very common post operatively.

2.16.2.2. Epidural Use

- Addition of clonidine to the epidural mixture may be useful where there is a previous history of neuropathic pain e.g. regional pain syndromes of limbs which are undergoing surgical intervention.
- Pre-operative use of clonidine electively prior to surgery is sometimes used in severe pain states to prevent stimulation of the adrenergic system and potential risk to long term chromic neuropathic pain e.g. prior to limb amputation.
- 250-500mcg per 250ml/500ml bag of standard bupivacaine mis (0.125% with 2 or 4 mcg of fentanyl) would be adequate without causing severe additional side effects.
- This should be undertaken using full aseptic technique when adding additional drug to bag.
  Clear labelling of addition to bag should be undertaken and should only be used in exceptional circumstances in this way.

2.16.3. Addition to a PCA Opioid Mix

2.16.3.1. The addition of a small dose of clonidine (50mcg clonidine for a 50mg morphine PCA infusion) may improve pain scores and decrease PONV but the risk of hypotension, urinary retention and sedation is high.

2.16.3.2. If given intravenously the maximum of 200mcg per day should not be exceeded.

2.16.4. Contraindications to Clonidine

The majority of major contraindications and side effects refer to a much higher therapeutic dose range than that being used as an analgesic adjunct but caution should be shown where the patient has a previous history of:

- Depression
- Acute Porphyria
- Raynaud's phenomena

2.16.5. Common Side Effects of Clonidine if the Acute Post-Operative Setting

- Hypotension
- Dry mouth
- Sedation
- Depression or euphoria
- Nausea

2.16.6. Monitoring and Precautions

2.16.6.1. Where clonidine has been used as a single intrathecal dose the normal routine post spinal observations will be sufficient which will include motor power and tone, sensation, sedation levels, respiratory rate and pulse and blood pressure.

2.16.6.2. Patients receiving clonidine infusions will normally be receiving opioid therapy – usually in conjunction with epidural or PCA and will be undergoing the routine observations expected for opioid administration as such.

2.16.6.3. Close observations should be made hourly for sedation, which if excessive, i.e. 2 or more should lead to decreased rate of administration or the removal of the clonidine from the post-operative mixture (either epidural or PCA).

2.16.6.4. Monitoring of pain scores is essential.

- It would not be expected that clonidine be used long term unless in a chronic pain condition where the involvement of the chronic pain team should be sought.

- N.B. Sudden withdrawal after long term use may result in rebound hypertension.

- In the acute pain setting it would be expected not to be used for longer than 2 days when withdrawal of a low dose should not be an issue although monitoring of blood pressure should continue at more frequent intervals up to 24 hours after the drug is stopped.

2.17. *Other Adjuvant Drugs*

2.17.1. Antidepressants:

2.17.1.1. Based on chronic neuropathic pain states it is reasonable to extrapolate that the tricyclic antidepressants and selective serotonin re – uptake inhibitors may be useful in acute neuropathic pain state.

2.17.1.2. There is no evidence that giving one does immediately pre op helps.

2.17.1.3. Adverse effects are common and all drugs should be started in low dose.

2.17.1.4. Elective patients may benefit from a 2 week course prior to surgery and continuation for a time period post operatively.

2.17.2. Anticonvulsants/Anti-neuropathic agents

2.17.2.1. Peri operative gabapentinoids (Gabapentin/Pregabalin) reduce post-operative pain and opioid requirements and may reduce the incidence of vomiting, pruritis and urinary retention but increase the risk of sedation in the post-operative patient.

2.17.2.2. They may be useful in the acute neuropathic pain states.

2.17.3. Membrane Stabilisers: Lignocaine

2.17.3.1. Peri operative lignocaine as an infusion has been shown to opioid spare, reduce pain scores, PONV and duration of ileus and would seem reasonable to treat acute neuropathic pain state.

2.17.3.2. Please refer to the ‘Intravenous Lidocaine (Lignocaine) Use for Perioperative Analgesia Clinical Guideline’ for dosing regimens.

2.17.4. Calcitonin

2.17.4.1. Calcitonin is a peptide hormone which regulates calcium homeostasis is vertebrates but also has analgesic properties via serotonin pathways.

2.17.4.2. Salmon calcitonin is commonly used and has been shown to decrease acute bony pain and acute phantom limb pain.

2.17.5. Cannabinoids

Currently no evidence to support use in acute pain states.

2.17.6. Glucocorticoids

2.17.6.1. Inhibit the production of prostaglandins, leukotrienes and cytokines.

2.17.6.2. Dexamethasone (4-8mg stat per op) can reduce post-operative pain, nausea and fatigue.

2.17.6.3. IV administration can cause flushing and perineal tingling.

2.17.6.4. Care should be taken in administration to diabetics and blood sugar should be monitored immediately post op.

2.17.7. Biphosphonates

IV Pamidronate – 3 daily doses can reduce bony pain associated with fractured vertebrae and metastatic Ca.

2.18. *Other Additional Analgesic Agents*

2.18.1. TENS

2.18.1.1. Transcutaneous electrical nerve stimulation may activate the gate theory of pain and lead to opioid sparing if pads are placed near wound. If sterile pads are not available then they should be placed outside of the dressings.

2.18.1.2. Limited in that patient has to be shown pre operatively how to work and ideally should not be left on for 24-48 hours continuously as may be required.

2.18.1.3. If this was to be considered as one of the options – contact the pain team.

2.18.2. Acupuncture

Not easily available for the peri operative patient and not of proven benefit.

2.19. *Regional Anaesthesia: Nerve Catheters and Epidurals*

2.19.1. Where ever possible these should form part of the treatment plan.

2.19.2. The epidural should still be considered the gold standard for post-operative pain relief for laparotomies, particularly in the opioid tolerant patient, the young and those with previous poor pain relief experiences. (see separate epidural guidelines for more detail).

2.19.3. Patients at risk of neuropathic pain states – particularly in limb surgery where prior sensitisation is an issue may benefit from a clonidine epidural or indwelling local anaesthesia post operatively via a catheter and infusion pump or a pain buster elastomeric infusion device.

2.19.4. Indwelling infusions should be in line with hospital policies and the appropriate pump used for epidural (yellow McKinley 575), grey for local anaesthetics.

2.19.5. Extension of the block for 2 – 3 days post-operatively will decrease immediate opioid requirements and allow previous opioid doses to be resumed.

2.19.6. Tunnelled catheters will remain more firmly fixed and can be left in for longer at the discretion of the Acute Pain Team.

2.19.7. Choice of Local Anaesthetic Mix:

2.19.7.1. Any choice of local anaesthetic should be aimed towards a larger volume of a dilute mix to enable some motor power to be maintained. Currently our standard local anaesthetic for nerve catheters is 0.125% Levobupivacaine.

2.19.7.2. Varying opioid requirement versus local effect – use both LA infusion and PCA – particularly useful where there has been previous opioid consumption or where there are 2 surgical sites and all dermatomes are not covered.

2.19.7.3. Background to PCA may be required when careful monitoring in appropriate ward setting required.

2.19.7.4. Addition of clonidine – only where there is presence of neuropathic pain pre operatively or increased risk post operatively and beware of hypotension.

2.19.7.5. Maintain on a reasonable rate unless hypotension requires decrease – if patient comfortable with minimal side effects there is no reason to decrease the infusion and may mean that the patient feels unnecessary discomfort which will be harder to eliminate.

2.19.7.6. How long to keep in? – Depends on when oral intake starts and what baseline previous analgesic needs have been – needs plan in conjunction with pain team if possible.

2.19.8. Weaning?

2.19.8.1. Most patients require the more invasive forms of analgesia (epidurals, LA infusions and PCA) for the first 48 hours post operatively – complex pain patients may require a longer period of time with both infusions of local anaesthetic and PCA's and a period of reassurance when the block is turned off that they can reassess it if required, (i.e. do not immediately remove catheter).

2.19.8.2. Epidurals do not require weaning, when the decision to stop occurs they should be turned off. If in conjunction with a PCA, the epidural should be stopped first, and, after a period of observation of adequate pain relief, removed at a suitable time post thromboprophylaxis (minimum of 6 hours after last dose of fragmin).

2.19.8.3. Similarly, local anaesthetic infusions should be stopped and a period of observation with PCA still in use to ensure adequate analgesia prior to removal of catheter.

2.19.8.4. If using a PCA with a background infusion, decrease the background infusion initially and leave the bolus dose.

2.19.8.5. If on previous opioids, restart either patch or slow release formulation for a minimum of 12 hours prior to removing PCA.

2.19.8.6. When removing PCA ensure that there is adequate amount of breakthrough (eg Oramorph) prescribed , both in frequency (usually hourly) and amount.

2.19.8.7. Caution should be taken where there is renal impairment and opioids should be prescribed less frequently than hourly and correlated with pain scores and respiratory rate.

2.19.8.8. Convert Ketamine IV form to oral or stop after 2 days.

2.20. *Opioid Prescribing for the Opioid Tolerant Patient*

2.20.1. Many patients requiring surgery may already be on a strong opioid either for the condition requiring surgery or for some other chronic ailment.

2.20.2. These patients will be opioid tolerant and require modified regimes to obtain both analgesia and to prevent withdrawal.

2.20.3. Establish why the patient is on opioids – if the cause is to be surgically corrected their need may be less post operatively, if however, there is unrelated pathology then their original opioid requirement is not likely to change and should be maintained pre and post operatively.

2.20.4. If local anaesthetic blocks are used in a patient taking slow acting opioid preparations there is a risk of side effects such as respiratory depression occurring if the pain stimulus is obtunded and careful monitoring should occur around the time of the local block and duration of infusion.

2.20.5. Where there is a great concern about drug absorption or respiratory depression post operatively or concerns that there may be confusion over slow release opioids then the simplest policy would be to convert the patient several days prior to operation to the more rapidly metabolised form of the drug – e.g. convert MST bd to equivalent amounts of oromorph, use a PCA pot operatively and then recommence oromorph followed by reconversion to MST.

2.20.6. Where it is felt that there will be no renal impairment and oral fluids will be tolerated rapidly post operatively then the longer acting drugs may be continued with appropriate monitoring and the addition of a PCA – but with bolus only regimes. This must be made very clear on the prescription chart that the two are running in synchrony and that naloxone is prescribed for low respiratory rates.

2.20.7. Slow release drugs should be started 12 hours prior to cessation of PCA.

2.20.8. When a patient is opioid tolerant the post-operative needs may require a PCA delivering both a background infusion and larger bolus doses. These patients should have more frequent monitoring than for the standard PCA user.

2.20.9. Calculating the Amount to give in the Opioid Tolerant

2.20.9.1. This is never an exact science as pain levels will vary tremendously in patients.

2.20.9.2. Look at daily morphine requirements prior to operation: if not morphine, convert to morphine equivalent dose as per BNF. You may expect the patient to require additional analgesia over and above this for the operative intervention however the background and bolus dosage together should not exceed the baseline requirement by more than an additional 30% and must be delivered in monitored circumstances, e.g.;

- 10mg of oral morphine is equivalent to 5mg oxycodone, 1.3mg hydromorphone.

- Fentanyl patch of 25 microgram hourly release equates to 90mg oral morphine/24 hours.

2.20.9.3. Conversion from total 24 hours dosage of oral morphine to amount required as a total intravenous dose should mean a reduction in total by 60% delivered as both a background and bolus mix.

2.20.9.4. Background infusions should not normally exceed 2mg per hour unless discussed with the Acute Pain Team and bolus doses 4mg maximum in exceptional circumstances. Where the bolus dose is increased it would be expected that the time interval between doses also be increased.

2.20.9.5. If local anaesthetic blocks are used then the background and bolus should be much lower e.g. 1mg background and normal 2mg bolus.

2.20.9.6. These patients may require longer in recovery to establish the correct regime or if during the day ask the acute pain nurse to regularly check. There should always be increased monitoring of patient receiving background infusions and the ward should place them in the central bays and do a minimum of hourly observations throughout the PCA episode whilst a bolus is in place.

2.20.9.7. As soon as the patient is able to tolerate oral fluids their pre op regime can be recommenced. If the original cause of the pain is thought to have been eradicated by the surgery they may still require some opioids initially from which they can wean down their dependence.

2.20.9.8. Where a patient cannot tolerate oral drugs but the PCA is

restricting their activity then opioids such as buprenorphine or fentanyl can be used in patch form and sublingual/lozenge preparations. (These will take up to 12 hours to become effective.)

2.20.9.9. When in doubt ask, prescribe less than the maximum dose until you are sure of the patients tolerance and ensure adequate monitoring and follow up occurs.

2.20.9.10. Remember that you should be using a multi modal approach to analgesia utilising both local anaesthetic, NSAID's, paracetamol and occasionally less strong supplementary opioids such as tramadol particularly when looking to decrease drug regimes.

3. Monitoring compliance and effectiveness

Element to be monitored	Adherence to RCHT Guidelines
Lead	Pain Service
Tool	Regular audit of the pain service is undertaken along with daily review of complicated cases. Audit and review Tool using patient documentation.
Frequency	See above
Reporting arrangements	The committee reviewing the cases will be the anaesthesia directorate. Cases will be discussed at audit meetings and the details will be recorded in the minutes.
Acting on recommendations and Lead(s)	See above
Change in practice and lessons to be shared	Required changes to practice will be identified and actioned within a month. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant stakeholders.

4. Equality and Diversity

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the 'Equality, Inclusion & Human Rights Policy' or the Equality and Diversity website.

4.2. *Equality Impact Assessment*

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

Appendix 1. Governance Information

Document Title	Peri and Post-Operative Pain Control for Complex Pain Patients Clinical Guideline V2.0		
Date Issued/Approved:	16 November 2019		
Date Valid From:	November 2019		
Date Valid To:	November 2022		
Directorate / Department responsible (author/owner):	Nicholas Marshall, Consultant Anaesthetist		
Contact details:	01872 250000		
Brief summary of contents	The purpose of this guideline is to provide anaesthetists with a framework to identify and care for those patients who have complex analgesia requirements peri-operatively.		
Suggested Keywords:	Chronic pain, acute pain, opioid abuse, neuropathic pain, Ketamine, epidural, clonidine		
Target Audience	RCHT	CFT	KCCG
	✓		
Executive Director responsible for Policy:	Medical Director		
Date revised:	November 2019		
This document replaces (exact title of previous version):	Guidelines for Peri and Post-Operative Pain Control for Complex Patients V1.2		
Approval route (names of committees)/consultation:	Speciality leads of General Anaesthesia, Critical Care and Pain		
Care Group General Manager confirming approval processes	Roberta Fuller		
Name and Post Title of additional signatories	Not Required		
Name and Signature of Care Group/Directorate Governance Lead confirming approval by specialty and care group management meetings	{Original Copy Signed}		
	Name: Matthew Body		
Signature of Executive Director giving approval	{Original Copy Signed}		

Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet & Intranet	✓	Intranet Only	
Document Library Folder/Sub Folder	Clinical / Anaesthesia			
Links to key external standards	AAGBI, The British Pain Society			
Related Documents:	None			
Training Need Identified?	No			

Version Control Table

Date	**Version No**	**Summary of Changes**	**Changes Made by** *(Name and Job Title)*
10.01.12	V1	Initial Issue	Acute Pain Team Lead Clinician Dr Anne Dingwall
03.04.13	V1.1	Reformat	Dr N Marshall Consultant Anaesthetist
29.09.16	V1.2	Review and reformat into new template	Dr N Marshall Consultant Anaesthetist
16.11.19	V2.0	Review and reformat into new template	Dr N Marshall Consultant Anaesthetist

All or part of this document can be released under the Freedom of Information Act 2000

This document is to be retained for 10 years from the date of expiry.
This document is only valid on the day of printing

Controlled Document

This document has been created following the Royal Cornwall Hospitals NHS Trust Policy for the Development and Management of Knowledge, Procedural and Web Documents (The Policy on Policies). It should not be altered in any way without the express permission of the author or their Line Manager.

Appendix 2. Initial Equality Impact Assessment Form

Name of the strategy / policy /proposal / service function to be assessed Peri and Post-Operative Pain Control for Complex Pain Patients Clinical Guideline V2.0					
Directorate and service area: Anaesthesia			**New or existing document:** Existing		
Name of individual completing assessment: Dr N Marshall			**Telephone:** 01872 250000		
1. *Policy* Aim* *Who is the strategy / policy / proposal / service function aimed at?*	The purpose of this guideline is to provide anaesthetists with a framework to identify and care for those patients who have complex analgesia requirements peri-operatively				
2. *Policy* Objectives*	To provide anaesthetist with a framework to identify and care for those patients who have complex analgesia requirements peri-operatively.				
3. *Policy* – intended Outcomes*	Appropriate and safe management of such patients.				
4. *How will you measure the outcome?	Monitoring through audit and case discussion at governance meetings.				
5. Who is intended to benefit from the *policy*?	Patients				
6a Who did you consult with	Workforce	Patients	Local groups	External organisations	Other
	X				
b). Please identify the groups who have been consulted about this procedure.	Speciality leads of General Anaesthesia, Critical Care and Pain				
What was the outcome of the consultation?	**Agreed**				

7. The Impact
Please complete the following table. **If you are unsure/don't know if there is a negative impact you need to repeat the consultation step**.

Are there concerns that the policy **could** have differential impact on:				
Equality Strands:	Yes	No	Unsure	Rationale for Assessment / Existing

				Evidence
Age		**X**		
Sex (male, female, trans-gender / gender reassignment)		**X**		
Race / Ethnic communities /groups		**X**		
Disability - Learning disability, physical impairment, sensory impairment, mental health conditions and some long term health conditions.		**X**		
Religion / other beliefs		**X**		
Marriage and Civil partnership		**X**		
Pregnancy and maternity		**X**		
Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian		**X**		

You will need to continue to a full Equality Impact Assessment if the following have been highlighted:

- You have ticked "Yes" in any column above and
- No consultation or evidence of there being consultation- this excludes any *policies* which have been identified as not requiring consultation**. or**
- Major this relates to service redesign or development

8. Please indicate if a full equality analysis is recommended.	**Yes**		**No**	**x**
9. If you are **not** recommending a Full Impact assessment please explain why.				
Not Indicated				

Date of completion and submission	*Nov 2019*	Members approving screening assessment	Policy Review Group (PRG) **'APPROVED'**

This EIA will not be uploaded to the Trust website without the approval of the Policy Review Group.

A summary of the results will be published on the Trust's web site.