Oxycodone - Palliative Care (Adults)

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1. Overview

Purpose

This protocol outlines the administration, prescribing and monitoring of oxycodone at Waitemata District Health Board.

Scope

All medical and nursing staff

⚠ This guideline is for use in Palliative Care ONLY.

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2. Presentation

Formulation	Brand Name	Strength
Oxycodone Hydrochloride Ampoules	Oxynorm®	20mg/2mL (=1mg/ml) 50mg/mL (high strength)
Oxycodone Oral Immediate Release Liquid	Oxynorm®	5mg/5ml (= 1mg/ml)
Oxycodone Oral Immediate Release Capsules	Oxynorm®	5mg, 10mg, 20mg
Oxycodone Oral Controlled Release/Modified Release Tablets	Oxycontin®	5mg
Oxycodone Oral Controlled Release/Modified Release Tablets	Oxycodone CR (BNM)®	10mg, 20mg, 40mg, 80mg
Note: Immediate Release = short acting Controlled Release/CR/Modified Release = long acting		

3. Indications

Licensed:

- Moderate to severe pain which is opioid responsive
- Oral, subcutaneous and intravenous administration[1]

Note: Oxycodone is more expensive than morphine and should generally be reserved for patients who cannot tolerate morphine. [2]

4. Dose

Always specify the formulation when prescribing ORAL oxycodone e.g. oxycodone immediate release or oxycodone controlled release/modified release (i.e. do not chart oxycodone).

4.1 Introduction

Not all pain responds to opioids. Before prescribing oxycodone, a patient must have a pain assessment and the likely cause of pain determined so that the most effective management can be implemented.

Start with small doses and titrate according to response.

Despite careful titration of oxycodone, some individuals will have intolerable side-effects or a poor analgesic response. If this happens, the following steps should be taken:

1. Review pain diagnosis
    - Some pains respond poorly to opioids e.g. pain due to spinal cord compression often responds better to high dose dexamethasone
    - Incident pain may be better treated with another approach

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- Colicky abdominal pain due to bowel obstruction may be better treated with an antispasmodic e.g. hyoscine butylbromide

2. Ensure adequate management of side effects
   - REGULAR laxatives if constipation is a problem
   - REGULAR anitemetics via a parenteral route if nausea/vomiting is a problem

In some cases it may be worth 'switching' oxycodone to another opioid as there could be individual variability in response to opioids. A systematic review showed no difference in side effect profile between morphine and oxycodone.[3]

4.2 Oral Oxycodone – Starting Dose if Opioid Naïve

Ideally patients should be prescribed immediate release oxycodone initially and be converted to controlled release oxycodone when the 24 hour dose requirement is established.

Oxycodone immediate release

- Prescribe **2.5 – 5mg PO q 1-2 hourly PO PRN** (Note the lowest strength capsule is 5mg but liquid is available)

Oxycodone controlled release/modified release

It may be more convenient in some patients to commence regular 12 hourly controlled release oxycodone at the lowest dose of **5mg PO twice daily (BD)**

- Also chart PRN doses when a BD controlled release dose is charted, e.g. Oxycodone immediate release **2.5mg PO q 1 - 2 hourly PRN**
- A safe initial PRN dose in patients on background controlled release oxycodone is about 1/6th of the total daily dose

4.2.1 Oral Oxycodone - Increasing Doses of Controlled Release Oxycodone

- The dose of controlled release oxycodone may need to be increased if more than three PRN doses are needed for breakthrough pain in 24 hours[2]
- Generally the dose should not be increased more frequently than every 48 hours
- When the regular BD dose is increased, the PRN dose should also be increased so it remains about 1/6th of the <u>total</u> daily dose of controlled release oxycodone

Note: If PRN doses are being used predominantly for incident/movement related pain, it may not be necessary to increase the background dose of controlled release oxycodone

Seek advice from the Palliative Care Team or Pain Team if:
- a patient's pain is increasing despite increasing doses of controlled release oxycodone OR
- the dose is more than 200mg per day

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4.3 Subcutaneous Oxycodone – Starting Dose if Opioid Naïve

Subcutaneous Bolus Dosing

Start with PRN subcutaneous oxycodone initially.
Recommended starting dose:

- oxycodone **2.5mg subcut q ½ - 1 hourly PRN**

If more than THREE PRN doses are required in a 24 hour period then consider the use of a continuous subcutaneous infusion (CSCI) of oxycodone via a Niki T34 pump.

Continuous Subcutaneous Infusion (CSCI) Dosing

- Calculate the total amount of oxycodone the patient has required over the past 24 hours and prescribe this amount as a continuous 24 hour infusion. Also chart about 1/6th of the total dose as a PRN dose q ½ - 1 hourly for breakthrough pain.

- If a patient requires a continuous subcutaneous infusion but has not yet had 12 - 24 hours of PRN subcut doses to guide infusion dose, start with a dose of **5 – 10mg over 24 hours**.

- All continuous subcutaneous infusions should be reviewed every 24 hours until pain is stable and PRN use is three or fewer doses per 24 hours. If more than three PRN doses have been used, increase the infusion by an equivalent amount.

- If the patient requires PRN doses for movement related pain, it is better to keep the background dose of oxycodone in the infusion low to allow for more PRN doses to be used when required.

4.4 Suggested Conversion Ratios

Conversion from one opioid to another is not an exact science. Equianalgesic dose conversion tables have limitations. A major factor is that the oral bioavailability of opioids varies widely and unpredictably between individuals[2,4].

The conversion table below provides guidance to a safe starting point. Patients should be reviewed 24 hours after conversion from one opioid to another, or from one route to another, and doses adjusted if necessary according to patient requirement.

Medication	Ratio	Example
PO oxycodone : SC oxycodone	**2:1**	20mg PO oxycodone = 10mg SC oxycodone
SC oxycodone : PO oxycodone	**1:1.5***	20mg SC oxycodone = 30mg PO oxycodone
PO morphine : PO oxycodone	**2:1****	10mg PO morphine = 5mg PO oxycodone
PO oxycodone : PO morphine	**1:1.5****	5mg PO oxycodone = 7.5mg PO morphine
PO morphine : SC oxycodone	**2:1**	10mg PO morphine = 5mg SC oxycodone
SC morphine : SC oxycodone	**1:1**	5mg SC morphine = 5mg SC oxycodone
IV oxycodone: SC oxycodone	**1:1**	5mg IV oxycodone = 5mg SC oxycodone
Note: PO = oral, SC = subcutaneous, IV = intravenous		

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*When converting from oral oxycodone to subcut a ratio of 2:1 should be used, however when converting from subcut to oral oxycodone a ratio of 1:1.5 should be used. ***Each conversion is conservative to account for the wide variability in response to opioids between individuals.***

**When converting from oral morphine to oral oxycodone a conservative conversion ratio of 2:1 should be used. When converting from oral oxycodone to oral morphine a ratio of 1:1.5 should be used. This reduces risk of overdose due to wide variability in systemic bioavailability of oral morphine.

5. Administration

5.1 Diluent

- For subcutaneous bolus administration oxycodone does not need to be diluted.[1]
- When added to a syringe driver the recommended diluent is water for injection.

5.2 Additional Equipment

- Subcutaneous Saf-T-Intima single lumen [ADM140] (*refer WDHB Policy Palliative Care- Subcutaneous Site Selection, Insertion and Monitoring of BD Saf-T-Intima Cannula*)
- Continuous subcutaneous infusion pump (Niki T34) if required

5.3 Compatibility

Compatible with:

- water for injection, 0.9% sodium chloride[1]
- metoclopramide, haloperidol, clonazepam, ketamine, levomepromazine, hyoscine hydrobromide, hyoscine butylbromide, midazolam, octreotide, dexamethasone, ondansetron, ranitidine[2, 5]

Concentration-dependent compatibility with:

- cyclizine[2, 5]

⚠ Do not use if the solution is cloudy or a precipitate is present.

5.4 Administration Procedure

Oral

- **Oxycodone controlled release/modified release tablets must NOT be crushed**
- **Oxynorm® capsules** must be swallowed whole. Use Oxynorm® liquid if the patient has difficulty swallowing

⚠ Immediate release oxycodone **should not** be administered at the same time as controlled release oxycodone. The absorption of oxycodone from OxyContin® and Oxycodone CR(BNM)® tablets is biphasic with 40% of the dose released initially. Onset of analgesia is usually within one hour.[1]

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Subcutaneous

- Should be injected through a Saf-T-Intima or directly by a subcutaneous needle
- The Saf-T-Intima should be flushed with 0.2ml of water for injection after administration of medication
- Can be administered via a continuous subcutaneous infusion pump (Niki T34)

6. Observation and Monitoring

- Observe patient for respiratory depression
- Monitor for excessive drowsiness
- Monitor for constipation and urinary retention
- Monitor for nausea and vomiting particularly at initiation of oxycodone

7. Mechanism of Action

Oxycodone is a full opioid agonist whose principal action is analgesia. It has affinity for kappa, mu and delta opioid receptors in the brain and spinal cord. Oxycodone is similar to morphine in its action.[1]

8. Contraindications and Precautions

Contraindications:

- Hypersensitivity to oxycodone or any of the constituents of the subcutaneous preparation
- Severe renal impairment (creatinine clearance < 10ml/min)[1, 2]

Precautions:

- Respiratory depression
- Raised intracranial pressure
- Renal impairment
- Hepatic impairment
- Acute asthma or other obstructive airways disease
- Severe CNS depression
- Convulsive disorders
- Paralytic ileus[1, 6]

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9. Adverse Effects

- Nausea and vomiting
- Pruritis
- Drowsiness
- Constipation
- Headache
- Dizziness
- Dyspnoea
- Respiratory depression
- Confusion, hallucinations
- Disorientation
- Vertigo
- Urinary retention
- Dry mouth
- Euphoria and dysphoria
- Tachycardia
- Dyspepsia
- Anorexia
- Insomnia
- Sweating
- Miosis, visual impairment
- Hypersensitivity/pain at injection site
- Dependence/tolerance[1]

10. Drug Interactions

- Anticholinergic agents – increase risk of anticholinergic adverse effects including severe constipation and urinary retention
- Additive effects with CNS depressants e.g. alcohol, other opioids, sedatives and hypnotics
- Rifampicin and carbamazepine may reduce oxycodone plasma concentrations
- Erythromycin and clarithromycin may increase oxycodone plasma concentrations
- Monoamine oxidase inhibitors
    - non-selective MAOIs intensify the effects of opioids which can cause anxiety, confusion and significant respiratory depression
    - do not use oxycodone while on an MAOI or within two weeks of stopping[1, 6]

11. References

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