Fentanyl Patches - Palliative Care (Adult)

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1. Overview

Purpose

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

Scope

All medical and nursing staff

⚠ This guideline is for use in Palliative Care ONLY.

Fentanyl patches are not appropriate for opioid naïve patients or for patients whose pain is unstable/highly variable

2. Presentation

Fentanyl Transdermal Patch 12.5 microgram/hr, 25 microgram/hr, 50 microgram/hr, 75 microgram/h, 100microgram/hr.

Patches are generally applied every 72 hours

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3. Indications

Licensed:

- Management of chronic cancer pain
- Management of opioid-responsive chronic severe pain of non-malignant origin in opioid tolerant patients after other conservative methods of analgesia have been tried[1]

Unlicensed:

- Preferred opioid for use in patients with significant renal impairment[2]

4. Mechanism of action

- Fentanyl is a potent opioid analgesic with selective action at the mu-opiate receptor.[1] It has a rapid onset and short duration of action. Fentanyl may cause less constipation, sedation, and cognitive impairment than morphine.[4, 5]
- Transdermal (TD) fentanyl is a self-adhesive skin patch which provides continuous systemic delivery during the 72 hour application period. [1]

5. Dose

There have been numerous studies which have lead to some controversy about the pharmacokinetics, conversion factors and therefore doses of fentanyl.[3]

The following doses and conversion factors are a guideline only and each patient must be assessed on an individual basis. Advice should be sought from the Palliative Care Team.

5.1 Suggested Starting Strength of Fentanyl Patch

Table 1. Starting strength and equivalent opioid doses[1, 4]

Fentanyl Patch (microgram/hr)	Subcutaneous fentanyl [mcg/24hr]	Oral Morphine (mg/24hr)	Subcutaneous Morphine (mg/24hr)	Oral Oxycodone (mg/24hr)
12.5	300	30	15	15
25	600	60	30	30
50	Volume restrictions apply	120	60	60
75		180	90	90
100		240	120	120
Note: Refer to the Palliative Care Team if not familiar with this medication.				

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5.2 Suggested Rescue / PRN Medication Doses

Table 2. Rescue / PRN equivalent opioid doses[1, 4]

Fentanyl Patch (microgram/hr)	Subcut fentanyl q½ hourly PRN (microgram)	Oral Morphine q1hourly PRN (mg)	Subcut Morphine q½ hourly PRN (mg)	Oral Oxycodone Q2 hourly PRN (mg)	Subcut Oxycodone Q30mins - 1 hourly PRN (mg)
12.5	25	5	2.5	2.5	2.5
25	50	10	5	5	2.5
50	Use another opioid	20	10	10	5 - 10*
75	Use another opioid	30	15	15	7.5 – 15*
100	Use another opioid	40	20	20	10 – 20*
Note: The subcutaneous oxycodone dose differs depending on the conversion used. If converting from oral oxycodone to subcut oxycodone the ratio is 2:1. If converting from subcut morphine to subcut oxycodone the ratio is 1:1.					

If the patient uses more than THREE PRN doses in 2 hours, the cause of escalating pain should be assessed and the background opioid dose reviewed. Also consider increasing the background opioid dose if the patient uses more then THREE PRN doses in 24 hours.

5.3 Considerations for prescribing

- Fentanyl Patches are inappropriate in patients with acute (short-term) pain and in those who need rapid dose titration for severe uncontrolled pain as there is a delay of 12 hours or more before any analgesic benefit is experienced by the patient.[4]
- Subcutaneous (or in some situations intravenous) opioids are more effective for achieving quick control of pain and establishing adequate blood levels rapidly. Use this route when speed is important, or when more flexible doses or dosing intervals are desired.[5]
- Fentanyl Patches may take from 12 – 24 hours to have their full clinical effect so rescue analgesia must be charted.[2, 5] Regular rescue doses are usually required for the first 12 hours after applying the patch.
- When a fentanyl patch is removed, drug levels decline gradually. Patches leave a depot in the skin which will continue releasing fentanyl after removal.[6] It can take from 17-25 hours for 50% of the drug to be eliminated.[1]
- Fever may increase the absorption of fentanyl from the patch due to vasodilation and can cause toxicity e.g. drowsiness.[5]

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Converting from other dose forms

- When converting from:
    - 12-hourly oral sustained release morphine or oxycodone, apply the fentanyl patch at the same time as the last dose of the sustained release morphine or oxycodone
    - Syringe driver with morphine (CSCI), continue the infusion unchanged for 8–12h after applying the patch, then discontinue
    - Syringe driver with fentanyl (CSCI), continue the infusion unchanged for 6h after applying the patch, then discontinue[4]

- Converting from morphine to fentanyl can result in opioid withdrawal symptoms (e.g. shivering, diarrhoea, bowel cramps, nausea, sweating and restlessness) despite satisfactory pain relief. This is probably due to the differences between the opioids in relation to their relative impact on peripheral mu-opioid receptors. These symptoms can be relieved with PRN morphine until symptoms resolve over a few days.[4]

6. Administration

Step	Action
1	Cleanse the site of application with clean water (avoid soaps, oils, lotions etc.). Ensure the site is dry and skin undamaged.
2	Remove patch from the sealed pouch.
3	Peel off the plastic backing without touching the adhesive side of the patch.
4	Apply to an intact hairless spot of skin on the upper part of the body or the upper arm. The site should be different each time.
5	Press with the palm of the hand for about 30 seconds.
6	Tape can be used around the edges of the patch to ensure adherence. If patch still does not adhere a transparent adhesive dressing may be used (i.e. Opsite®). **Never fully cover with any other bandage or tape.**
7	Wash hands after applying or removing patches.
8	The patch should be removed and replaced after 72 hours.
9	Up to 25% patients may need their patch changed every 48 hours.[5]
10	Write the date and time the patch was applied on the patch.
11	**Patches should never be cut.**
12	Avoid direct exposure of the patch to heat e.g. heat packs as this can increase absorption and cause toxicity.
13	When removed, the patch should be folded in half so that the adhesive side adheres to itself and placed securely in the sharps bin.[1, 4]

7. Observation and monitoring

- Monitor for excessive drowsiness
- Monitor for respiratory depression
- Monitor for skin irritation at the site[1]

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8. Contraindications and Precautions

Contraindications

- Intolerance or hypersensitivity to fentanyl[1]

Precautions

- Respiratory impairment
- COPD
- Elderly
- Increased intracranial pressure
- Bradycardia
- Hepatic impairment[1]
- Patch must be removed for MRI scans

9. Adverse Effects

Respiratory depression and apnoea	Bradycardia	Nausea and vomiting
Drowsiness	Hypotension	Dizziness
Constipation	Diarrhoea	Anorexia
Hallucinations	Insomnia	Skin reactions – itch, rash
Euphoria	Headache	Confusion
Muscle spams	Anxiety	Visual disturbance
Sweating[1, 2]		
Note: *Patients who have had a serious adverse event should be monitored for up to 24 hours after patch removal*		

10. Drug Interactions

- Monoamine oxidase inhibitors
    - Non-selective MAOIs intensify the effects of opioids which can cause anxiety, confusion and significant respiratory depression sometimes leading to coma
    - Avoid concomitant use and for 2 weeks after stopping MAOIs
- Use with SSRIs or MAOIs may increase the risk of serotonin syndrome
- Additive effects with central nervous system depressants e.g. barbituates, benzodiazepines, tricyclic antidepressants, other opioids, general anaesthetics and alcohol
- CYP3A4 inhibitors may increase the serum concentration of fentanyl e.g. ritonavir, ketoconazole, itraconazole, fluconazole, erythromycin, clarithromycin, diltiazem, verapamil, and amiodarone
- CYP3A4 inducers may reduce the serum concentration of fentanyl e.g. rifampicin, carbamazepine, phenytoin and phenobarbital[1, 5]

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11. References

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