Fentanyl Patches - Palliative Care (Adult)

Contents

1. Overview

Purpose

This protocol outlines the administration, prescribing and monitoring of fentanyl patches at Te Whatu Ora - Waitematā.

Scope

All medical and nursing staff

⚠ **This guideline is for use ONLY in patients with advanced life-limiting illness receiving the palliative approach to care**

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/hr, 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 led 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 Hospital Palliative Care Team.**

5.1 Suggested Starting Strength of Fentanyl Patch

Table 1. Starting strength and equivalent opioid doses

Fentanyl Patch (microgram/hr)	Subcutaneous fentanyl [mcg/24hr]	Oral Morphine (mg/24hr)	Subcutaneous Morphine (mg/24hr)	Oral Oxycodone (mg/24hr)
12.5	300	<60	30	30
25	600	60-90	30-45	30-45
37.5	Volume restrictions apply	90-120	45-60	45-60
50		120-180	60-90	60-90
62.5		180-240	90-120	90-120
75		240-300	120-150	120-150
87.5		300-360	150-180	150-180
100		360	180	180

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5.2 Suggested Rescue / PRN Medication Doses

Table 2. Rescue / PRN equivalent opioid doses[8]

Fentanyl Patch being used (microgram/hr)	Subcut fentanyl Q30mins PRN (microgram)	Oral Morphine Q1hourly PRN (mg)	Subcut Morphine Q30minsPRN (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	25	10	5	5	5
37.5	50	15	7.5	7.5	7.5
50	Use another opioid	20	10	10	10
62.5	Use another opioid	30	15	15	15
75	Use another opioid	40	20	20	20
87.5	Use another opioid	50	25	25	25
100	Use another opioid	60	30	30	30
Note: It is recommended to start with lower more frequent dosing which can be increased if not effective.					

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

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] It can also take 3 days for peak plasma concentration to be reached, therefore patches should not be titrated daily

- 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	Check patient for existing patch (and remove) before application of new patch.
2	Cleanse the site of application with clean water (avoid soaps, oils, lotions etc.). Ensure the site is dry and skin undamaged.
3	Remove patch from the sealed pouch.
4	Peel off the plastic backing without touching the adhesive side of the patch.
5	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. Do not apply to oedematous or cachectic/bony areas.
6	Press with the palm of the hand for about 30 seconds.
7	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.**
8	Wash hands after applying or removing patches.
9	**The patch should be removed and replaced after 72 hours.**
10	Up to 25% patients may need their patch changed every 48 hours.[5]
11	Write the date and time the patch was applied on the patch.
12	Document site of patch administration in clinical notes or MedChart
13	**Patches should never be cut.**
14	Avoid direct exposure of the patch to heat e.g. heat packs as this can increase absorption and cause toxicity.
15	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. barbiturates, benzodiazepines, tricyclic antidepressants, gabapentinoids 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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