Policy

SYDNEY WEST AREA HEALTH SERVICE | NSW HEALTH

Analgesic transdermal 'patch' medications: prescribing and administration

Date Created: 9 February 2010

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Purpose

This policy will describe the process of prescribing and administering analgesic transdermal 'patch' medications including fentanyl (Durogesic®), and buprenorphine (Norspan®) for patients in hospital. [See education notes]

Intended Audience

Health professionals involved in the prescription and administration of analgesic transdermal 'patch' medications.

Expected outcomes

Analgesic transdermal 'patch' medications will be prescribed for patients appropriately. Analgesic transdermal patches should not be used for short term pain, pain following surgery or incident pain that may be related to dressing changes. [1]

Patients presenting to hospital will be assessed for existing transdermal analgesic patch treatment. The date and time of patch application will be noted and ongoing patches prescribed accordingly.

The analgesic transdermal patch will be administered according to the prescription with additional documentation completed that communicates accurately the management of the analgesic transdermal patch.

Definitions

Transdermal medication: An adhesive patch that is placed on the skin of the patient to deliver a dose of medication over a specified period of time

Policy Statement

This policy will outline the appropriate prescription, administration and disposal of analgesic transdermal patch medications. The policy will detail safety alerts associated with the opioid transdermal medications.

Procedure

SAFETY ALERT for fentanyl (Durogesic®) skin patches

1. **Fentanyl (Durogesic®) skin patches are very strong opioid painkillers that may cause death from overdose particularly in opioid-naïve patients** [1]
    - **Do not use fentanyl (Durogesic®) skin patches in opioid-naïve patients with chronic non-cancer pain** [1] and consider the benefits to harm before prescribing for cancer pain [2]
    - Elderly patients in whom there is reduced clearance and a prolonged half-life, may be more sensitive to the effects of fentanyl [2]

2. **Fentanyl (Durogesic®) skin patches should not be used for short term pain, pain following surgery or incident pain that may be related to dressing changes** [1]
    - Fentanyl (Durogesic®) patches should only be considered for pain management when alternative traditional analgesics have been determined ineffective

3. **Patients who are using fentanyl (Durogesic®) skin patches and their caregivers should be aware about the safe methods of storage and disposal of used or defective skin patches and those no longer required** [1]
    - Fentanyl (Durogesic®) skin patches should be stored in a safe place and out of reach of children [1]
    - Do not cut or divide patches [2]
    - Be aware of increased body heat (e.g. fever, humid climate) and direct heat (e.g. from electric blankets or heat packs) may increase the rate of absorption [3]

4. **Health care professionals who prescribe and administer fentanyl (Durogesic®) skin patches should be aware of the signs of fentanyl overdose** [1]
    - Signs of fentanyl overdose include trouble breathing or shallow breathing; tiredness, extreme sleepiness or sedation; inability to think, talk or walk normally; and feeling faint, dizzy or confused. If these signs occur, health professionals should obtain medical assistance [1]

Although this alert refers specifically to fentanyl patches, similar safety concerns and principles for use also apply to buprenorphine (Norspan®) patches. [1]

Indication

- The analgesic transdermal patch fentanyl (Durogesic®) is indicated for those patients with chronic pain and established opioid requirements who are unable to take oral morphine. [2] [See education notes]
- Fentanyl (Durogesic®) patches can be useful when morphine cannot be used due to severe renal impairment or when the oral route cannot be used because of vomiting or difficulty swallowing. [2]
- The analgesic transdermal patch buprenorphine (Norspan®) could be considered for patients with chronic severe pain not responding to non-opioid analgesics and when lower doses of strong opioids are indicated [3]

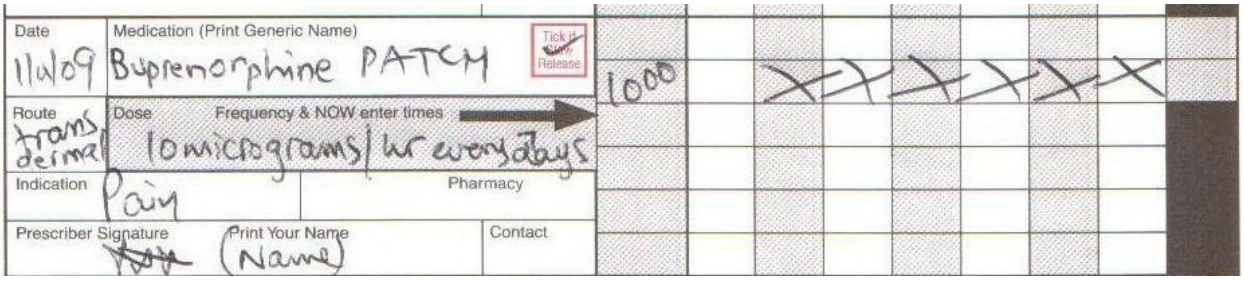
Caution

- The National Prescribing Service recommended that transdermal fentanyl patches should not be initiated in opioid-naïve patients with non-cancer pain, because of a high risk of adverse events such as respiratory depression. [2] [See education notes]

Prescription

- The prescribing of fentanyl (Durogesic®) patches as new pain management therapy that is commencing in hospital is restricted to Senior Medical Officers in Palliative Care, Pain Clinic or Medical Oncology staff ONLY [4]
- Analgesic transdermal patch medications must be prescribed on the hospital approved medication chart in accordance with the Handling of Medications in NSW Hospital Policy PD2007_77 [5]
- Analgesic transdermal patch medications must be prescribed on the patient's regular medication chart and must include the following:
    - medication by generic name only
    - strength of patch in milligrams or micrograms per hour
    - frequency that the patch is to be changed
    - if the patch is to stay on for more than 24hours the prescriber must cross out the days when the patch is to remain in place
- A suitable prescription could read

OR



Administration / application of an analgesic transdermal patch:

- The Analgesic Transdermal Patch Form [SWHR xxxx] must be used to document the application history including the location, removal and disposal of analgesic transdermal patches
- The analgesic transdermal patch must be administered by a registered nurse or endorsed enrolled nurse adhering to appropriate drug-checking procedures in accordance with the SWAHS policy: Medication Administration for Nurses and Midwives [6]
    - Check correct prescription, medication, dose, route, patient and time
    - Check expiry date of medication
- Only one patch should be worn at any one time UNLESS the dose required cannot be achieved with a single patch [7]
- Analgesic transdermal patches MUST NOT be cut and damaged patches must not be used
- **The administering nurse must check that any existing patch or patches on the patient are removed prior to a new patch or patches being placed**
- Perform routine handwash and wear gloves if necessary. Avoid touching the drug delivery surface of the patch
- The site of the patch must be rotated in order to minimise skin irritation by the medication and the physical properties of the patch
- Apply the patch or patches to skin that is clean, dry, unbroken, and without cuts or infection. A hairless part of the patient's body preferably on the chest or upper arm and in a different location from previous patch or patches. Apply light pressure with the palm of the hand for about 30 seconds, making certain the edges are adhering properly. [7]
- Sign for the administration of the patch on the medication chart
- Document on the Transdermal Opioid Patch Form [SWHR xxxx] including:
    - date and time of the removal of old patch or patches if applicable
    - date and time and location of application of new patch or patches
    - **daily check** of patch or patches to verify location and that they are intact
    - two initials for witness disposal of analgesic patch or patches (see below)

Optimising Fentanyl (Durogesic®) patch adhesion:

- In a minority of patients fentanyl (Durogesic®) patch adhesion can be a problem [8]
- Fentanyl (Durogesic®) is approved for use as a stand alone product. An additional adhesive layer such as micropore tape or other medical dressing is not required in the majority of patients [8]
- There are no studies that clinically evaluate the effect of using micropore tape or any other medical dressing over the Fentanyl (Durogesic®) patch [8]
- In patients who encounter problems with Fentanyl (Durogesic®) patch adhesion, use of a non-occlusive medical tape or dressing is an option to help secure the patch [8]

Observations:

- Monitor patient's pain and sedation scores. Increased sedation may occur particularly when concurrent opioids are being administered. These assessments can be documented on general observation chart.
- Effectiveness of analgesia and presence/absence of adverse effects should be documented in progress notes. Other appropriate forms of documentation could include use of any of the following pain assessment observation charts:
    - the Pain Assessment Observation Chart [SWHR-2617]
    - if a patient is utilising PCA, the Patient Controlled Analgesia Observation Chart [SWHR-2176]
    - or if a patient is on an epidural, the Epidural Infusion Observation Chart [SWHR-2177]
- Frequency of observations should be determined by the team who is responsible for pain management based on the clinical condition of the patient, however a minimum four hourly should be considered

Inadequate analgesia with analgesic transdermal patches:

- Contact the team responsible for pain management. Additional breakthrough analgesia (± opioid) may be required until pain management is achieved with the correct dose of a transdermal analgesic patch

Dislodged analgesic transdermal patches:

- Examine the patient to ascertain that a patch is no longer intact and document on the Analgesic Transdermal Patch Form [SWHR xxxx]
- Contact the team responsible for pain management to re-prescribe the patch and re-administer as soon as possible

Management of complications associated with transdermal patches:

- **Increasing sedation (Score ≥ 2):** Contact the team responsible for pain management
- **Respiratory rate: adults ≤ 10 breaths per minute:** Contact the team responsible for pain management
- **Nausea and vomiting**: Administer PRN antiemetic medication if ordered. If adverse effect continues, contact the team responsible for pain management
- **Patients who have experienced serious adverse events such as sedation and respiratory depression should be monitored for up to 24 hours after the** transdermal patch has been removed. Fentanyl (Durogesic®) serum concentrations decline gradually with a mean terminal half-life ranging from 22 to 25 hours. [7] [see observations above]

Patient education:

- Patients should be advised to avoid exposing transdermal opioid patches to heat sources such as heating pads, electric blankets, heated water beds, heat or tanning lamps, intensive sunbathing, hot water bottles, prolonged hot baths, saunas and hot spa baths while wearing the patch. Exposure to heat could result in a temperature dependent increase in opioid release from the patch. [7, 12]
- Prior to patient discharge, patients and/or their caregivers should be provided with a Consumer Medicines Information Leaflet (CMI) for the transdermal patch that has been prescribed, available from pharmacy or accessing the "MIMS online" via the Clinical Information Access Program.
- Important information for fentanyl (Durogesic®) and buprenorphine (Norspan®) patches that should be given to patients include:
    - signs and symptoms of overdose, trouble with breathing, tiredness, extreme sleepiness or sedation, inability to think, talk or walk normally, and feeling faint, dizzy or confused [9, 10]
    - safe storage of patches in a locked cupboard at least one-and-a half metres above the ground and a method of safe disposal [9, 10]

Disposal of analgesic transdermal patches:

- The contents of S8 analgesic opioid patches can be retrieved and abused by addicts. Deaths have occurred as a result of such abuse. [7] Fold used patches so the adhesive side of the patch adheres to itself, wrap and dispose in yellow sharps bin.
- Two members of staff must witness and sign the disposal of the patch or patches and documented on the Analgesic Transdermal Patch Form [SWHR xxxx] [See SWAHS policy: Medication Administration for Nurses and Midwives [6]].

Risk Rating

Medium

Implementation Plan

- Endorsement and approval of the policy by the SWAHS Area Drug Committee
- Ratification of policy by the Area Clinical Executive
- Broadcast of the new policy via SWAHS Broadcast
- Agenda a the Nursing and Leadership Committee
- Distribution to the Directors of Nursing throughout SWAHS hospitals

Education Notes

Fentanyl (Durogesic®)

Durogesic® is a fentanyl matrix transdermal system (patch). It is a drug in adhesive formulation designed to release fentanyl continuously for 72 hours after application to intact skin. It is available in five strengths delivering fentanyl 12, 25, 50, 75 or 100 microgram/hour to the systemic circulation. The amount of fentanyl released from each patch per hour is proportional to the surface area. The composition per unit area of all patches is identical. [7]

- **Indication for use (Durogesic®):**
  - Fentanyl patches should only be used for patients with chronic pain and established opioid need who are unable to take oral morphine. Individual response to opioids varies and some patients might experience uncontrollable adverse effects or poor analgesic response to morphine; in such cases fentanyl is one of several alternative opioids that might be considered. [2, 11]
  - Oral morphine is generally the first choice when an opioid is required for severe chronic pain, because of its familiarity, availability and range of strengths and formulations that allow greater flexibility in dose titration. [2]
- **Pharmacokinetics of fentanyl patch Durogesic®:**
  - After initial Durogesic® application, serum fentanyl concentrations increase gradually. The accumulation of fentanyl within skin tissue results in a significant delay before maximum serum concentrations are reached. Peak serum concentrations of fentanyl generally occur between 24 and 72 hours after the first application. [7] Other opioid analgesics may need to be continued during this period until peak serum concentration levels are reached.
  - After Durogesic® is removed, serum fentanyl concentrations decline gradually, with mean terminal half-life ranging from 22 to 25 hours. Continued absorption of fentanyl from within the skin accounts for the slower clearance from the serum than is seen after administration of fentanyl by intravenous infusion. [7]
  - Fentanyl is metabolised in the liver to inactive products and is suitable for patients with renal failure. Its adverse effects are similar to those of morphine but with a lower incidence of constipation and confusion. [11]

Buprenorphine (Norspan®)

Norspan® is a buprenorphine transdermal patch. Each patch provides a steady delivery of buprenorphine for up to 7 days. It is available in 3 strengths 5, 10 and 20 micrograms/hour. [12] Each new patch should be applied to a different site use of the same area of the skin should be avoided for the next 3 to 4 weeks. [13]

- **Indication for use (Norspan®)**
  - Buprenorphine patches could be considered in chronic severe pain when lower doses of strong opioids are indicated. [3]
  - Buprenorphine via the transdermal route is not suitable for acute pain. [12]
- **Pharmacokinetics of buprenorphine patch Norspan®:**
  - Buprenorphine is a partial opioid agonist, acting at the mu-opioid receptor. It also has antagonistic activity at the kappa-opioid receptor. The opioid agonist activities of buprenorphine are dose related. [12]
  - Buprenorphine is a partial agonist so there is a ceiling dose to its analgesic effect – that is, above a certain dose there is no further analgesic effect. The dose at which this occurs in humans is not established but it is unlikely in the transdermal patch. [3]
  - Because of its partial agonist activity, buprenorphine may trigger opioid withdrawal symptoms in people who have developed physical dependence on other opioids. [3]
  - Buprenorphine has high affinity for *mu* opioid receptors and is not easily displaced by opioid antagonists. Consequently, the effects are only partially reversed by naloxone. [3, 12]

References and Related Policies

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Version History

Date of Issue	Document Version	Change Details	Author
16 October	1	First draft	E.Edmonds
18 November	18 November 2009	Prescription recommendations Administration and disposal	E.Edmonds
26 November	26 November 2009	Indications for use of fentanyl patch Education notes	E. Edmonds
16 December	16 December 2010	Required observations Management of inadequate analgesia and complications Patient education including safe storage of patches Education notes for buprenorphine Optimising patch adhesion for Durogesic® patches Buprenorphine indications	E.Edmonds
2 February	2 February 2010	Formulary restrictions for fentanyl patches	E.Edmonds, Margaret Macarthur
9 February	9 February 2010	Grammatical improvements, documentation regarding dislodged and disposal of patches, clarification of patient education	E. Edmonds, E. Anderson