

POSITION STATEMENT: BUPRENORPHINE AND FENTANYL PATCHES FOR PAIN

Buprenorphine and Fentanyl Patches for Pain should be reserved for use in patients with **Chronic, Stable Pain who are Unable to Take or Tolerate Oral Medications** (Including soluble tablets/liquids). If prescribed, it is recommended that the reason for use is documented on initiation and if appropriate patients are switched back to oral formulations at review.

Oral morphine remains the strong opioid of choice and should be used 1st line where appropriate.

BASIS FOR THE RECOMMENDATION

- Transdermal formulations lack the flexibility required when treating patients with fluctuating or uncontrolled pain.
- The relative potency of formulations is not fully appreciated by some prescribers.
- There have been a number of safety incidents associated with accidental transfer or exposure of patches to another person and increased absorption of medication from patches on exposure to heat and after failure to remove old patches.
- Inappropriate use of transdermal formulations has cost implications for commissioners, as both buprenorphine and fentanyl are several times more expensive than equivalent doses of oral analgesics.
- It is recognised that some patients cannot take or tolerate oral medications; in this instance patients should have access to alternative formulations of pain relief.

Nb. Please check local commissioning arrangements before prescribing buprenorphine, use is not approved by some local organisations.

SUPPORTING INFORMATION

Flexibility of Dosing¹: Patch formulations lack flexibility of dosing and therefore should only be used in patients with stable pain. After the patch is applied, the serum concentration of drug rises slowly. Evaluation of analgesic effect should therefore only be made at least 24hrs after first application or change in dose.

After removal of the patch, it takes ~ 17-30 hrs for plasma concentrations to decrease by 50%. Consequently, it is recommended that patients who have severe side effects are monitored for up to 30hrs. (The precise time is dependent on the drug and formulation, see [BNF](#) for more details).

Relative Potency of formulations^{1,2,3}. Caution is required to ensure that when patches are prescribed a strength appropriate to the level of pain and analgesic history is chosen.

See [Appendix 1](#) for more information on opioid dose conversions.

Fentanyl is a potent opioid analgesic, a 25microgram/hr patch equates to 60-90mg of oral morphine, (this is an approximation and conversions published in the SPC range from 45-134mg of oral morphine/day). Therefore, fentanyl patches should only be used in patients who have previously tolerated opioids because there is a high risk of significant respiratory depression in opioid-naïve patients. See MHRA [Drug Safety Update](#) for more information.

Butrans® 5-10micrograms/hr patches are broadly comparable in analgesic effect to oral codeine 120mg-240mg/24hrs but are also thought to have a considerable placebo effect. (See the [MTRAC review](#) (2012) on the use of buprenorphine patches in the treatment of chronic, non-cancer pain for more information on efficacy).

Higher strength buprenorphine patches 35-70mcg/hr (Transtec® and Hapoctasin®) are comparable to fentanyl in potency, for example, a 35mcg buprenorphine patch is broadly comparable to a 25mcg fentanyl patch or 60-90mg of oral morphine.

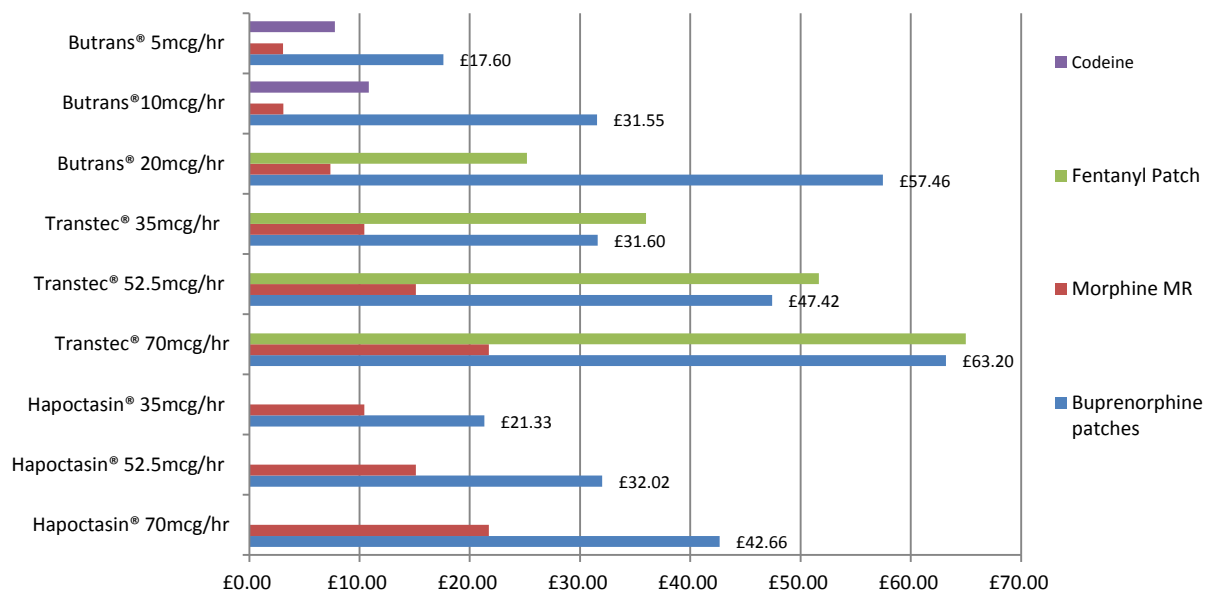
Safety^{1,2,5}: Buprenorphine and fentanyl patches are associated with a number of safety concerns. For example increased drug absorption and toxicity on exposure to heat and risk of accidental transfer or exposure of the drug to another person.

If patch formulations need to be used prescribers should advise patients or carers:

- To check the adhesion of the patch once applied, especially the edges
- To be aware that exposure to heat (e.g. if they take a hot bath or have a fever) may cause increased absorption
- That used patches still contain a significant amount of active drug and should be removed before applying a new patch.
- To record the date of patch application (and site of application if providing care for another person) to avoid dose omission or duplication.
- To fold the used patch as soon as it is removed so that the adhesive side of the patch sticks firmly to itself and dispose of the folded patch safely
- Patches should not be swallowed or transferred to another person. If a patch is accidentally transferred to another person, remove it immediately and seek medical advice. If a patch is swallowed, seek medical help immediately

Cost: Both buprenorphine and fentanyl patches are several times more expensive than equivalent doses of oral analgesics, therefore inappropriate use of transdermal preparations has cost implications for commissioners. It is recommended that the reason for using patch formulations is documented on initiation and if appropriate patients are switched back to oral formations at review.

Figure 1. Cost Comparison of Transdermal Opioid Preparations Vs ~ Equivalent of Oral Opioids (Cost / 28days treatment)



MIMS March 2015 prices have been used.

Dose equivalences are based on the following assumptions:

- Oral morphine is about 10 times the potency of oral codeine
- Transdermal buprenorphine is 100 times more potent than oral morphine.
- Transdermal fentanyl is approximately 1.4 times more potent than transdermal buprenorphine
- Buprenorphine costs are compared to approximate equivalent dose of Filnarine®. The costs of the Filnarine® have been calculated using the nearest practicable dose. (N.B. MST Continus® used for 5mg bd dose).
- Costs of Transtec® calculated using 2 patches per week as suggested in SPC i.e. a total of 8 patches per 28 days.
- Costs of Hapoctasin® calculated using 1 patch every 3 days i.e. a total of 9 patches per 28 days.
- Where the buprenorphine patch is comparable to a dose range of alternative opioid, the average cost has been used. This applies to codeine dose equivalent to 5 & 10mcg buprenorphine and fentanyl dose equivalent to 52.5 & 70mcg buprenorphine.

RECOMMENDATION: Fentanyl and Buprenorphine patches should be reserved for use in patients with chronic, stable pain who are unable to take or tolerate oral medications.

If prescribed, it is recommended that the reason for using patch formulations is documented on initiation and if appropriate patients are switched back to oral formations at review

References

1. British National Formulary (online) London: BMJ Group and Pharmaceutical Press <<http://www.bnf.org/bnf/index.htm> > [Accessed May 2015.
2. Medicines and Healthcare Products Regulatory Agency. *Fentanyl patches: Serious and fatal overdose from dosing errors, accidental exposure and inappropriate use. 2008. (Accessed May 2015)* <http://webarchive.nationalarchives.gov.uk/20141205150130/http://www.mhra.gov.uk/Safetyinformation/DrugSafetyUpdate/CON087796>
3. Commissioning Support. Buprenorphine Transdermal Patch (TransTec[®], BuTrans[®]) for the Treatment of Chronic Non-cancer Pain. Midlands Review and Therapeutics Committee (MTRAC) January 2012. Accessed at [http://centreformedicineoptimisation.co.uk/download/62aeef5064af7cff23f231651cf1e1c6/Buprenorphine on 17/3/15](http://centreformedicineoptimisation.co.uk/download/62aeef5064af7cff23f231651cf1e1c6/Buprenorphine%20on%2017/3/15).
4. LMMG. Chronic Non-Cancer Pain guidance. 2015 <http://www.lancsmmg.nhs.uk/wp-content/uploads/sites/3/2013/04/Chronic-Non-cancer-Pain-Guidelines-V1.0.pdf>
5. Medicines and Healthcare Products Regulatory Agency. *Transdermal fentanyl patches: reminder of potential for life-threatening harm from accidental exposure, particularly in children. 2014 (accessed May 2015. <https://www.gov.uk/drug-safety-update/transdermal-fentanyl-patches-reminder-of-potential-for-life-threatening-harm-from-accidental-exposure-particularly-in-children>)*

Appendix 1. Opioid Dose Conversion Chart for Adults.

Dose conversion ratios are approximate as there is a lack of definitive trial data to demonstrate dose-equivalence. They are intended as a guide and may be subject to individual variation. Prescribers should use with caution, particularly in the elderly, if there are significant co-morbidities or polypharmacy.

If switching opioids because of possible opioid-induced hyperalgesia, it is prudent to reduce the calculated dose of the new opioid by 25-50%¹⁷.

Morphine compared to weaker Opioids

Refer to the BNF & Summary of Product Characteristics for further information

Oral Morphine total 24hr dose	Oral Codeine total 24hr dose <small>(dihydrocodeine is roughly equipotent to codeine)</small>	Oral Tramadol total 24hr dose	Buprenorphine Patch Microgram/hr dose
	30 – 60 mg	≤50 mg	
5 – 10 mg	60 – 120 mg	50 – 100 mg	
10 – 20 mg	120 – 180 mg	100 – 200 mg	5 micrograms/hr <small>(BuTrans® Change every 7 days)</small>
20-30 mg	180 – 240 mg	200-300 mg	10 micrograms/hr <small>(BuTrans® Change every 7 days)</small>

Morphine compared to other Strong Opioids

(each preparation is compared to morphine and not necessarily equivalent to others in the table)

Morphine Oral Total 24 hour dose	Oxycodone Oral Total 24 hour dose	Fentanyl Patches Change every 3 days (72 hours)	Buprenorphine Patch Microgram/hr dose
30 – 60 mg	15 – 30 mg	12 micrograms/hr	20micrograms <small>(BuTrans® Change every 7 days)</small>
60 – 90 mg	30 – 45 mg	25 micrograms/hr	35 micrograms/hr <small>(Transtec®/Hapoctasin® Change every 4 days/96 hours)</small>
90 – 135 mg	45 – 70 mg	25 – 50 micrograms/hr	52.5 micrograms/hr <small>(Transtec®/Hapoctasin® Change every 4 days/96 hours)</small>
135 – 190 mg	70 – 100 mg	50 – 75 micrograms/hr	70 micrograms/hr <small>(Transtec®/Hapoctasin® Change every 4 days/96 hours)</small>
190 – 225 mg	100 – 120 mg	50 – 87 micrograms/hr	
225 – 315 mg	120 – 160 mg	75 – 100 micrograms/hr	
315 – 405 mg	160 – 200 mg	100 – 125 micrograms/hr	

Assumptions for Dose Conversion Chart for Adults:

- Oral morphine is about 10 times the potency of oral codeine
- Oral dihydrocodeine is equipotent to oral codeine
- Oral morphine is about 10 the potency of oral tramadol
- Transdermal buprenorphine is 100 times more potent than PO morphine.
- Transdermal fentanyl is approximately 1.4 times more potent than transdermal buprenorphine

Reference: Twycross R, Wilcock A (eds). Palliative Care Formulary (PCF4). 4th Edition. Nottingham:2011 pp.381-87 and pp.390-97. www.palliativedrugs.com (accessed January 2015).