

Medication alert

Transdermal patches

For the attention of: All staff who prescribe, dispense or administer transdermal patches

Purpose of this alert

To highlight the risks associated with the use of transdermal patches (both from the medicine and the delivery system).

Definition

Transdermal patch – a medicated adhesive pad placed on the skin for absorption of a time-released dose of medicine into the bloodstream.

How to reduce the risk of patient harm and errors?

1. Follow the specific instructions for the use of each patch.
2. Do not cut patches, unless the specific instructions allow this or specific advice is received from a pharmacist, pain specialist or pain team.
3. Apply each patch to a new site of clean, dry, non-irritated, intact, non-shaven, less-hairy skin each time, such as the chest, flank, back or upper arm (some patches specify appropriate sites in the product information).
4. For cognitively impaired patients – apply to the upper back (scapula area; out of reach of the patient) to prevent the patient removing the patch.
5. Ensure the active patch is put on before the inactive protective cover is applied.
6. Record administration – write the day, date and time of patch application on the:
 - back of the adhesive cover (if there is one) or on a piece of tape applied to the skin next to the patch
 - medication chart – include the location of the patch.
7. Do not apply heat to the area where the patch has been applied – this can cause lethal over-dosage.
8. Remove all used patches when a new one is applied, and record the day, date and time of removal on the medication chart.
9. Ask patients to continue to monitor themselves for adverse effects after patch removal.
10. Dispose of used patches safely by folding in half (sticky sides together) then disposing of them securely, so no one else can use them.
11. Check that a patient is not wearing patches prior to MRI, diathermy, defibrillation and cardioversion procedures. Some patches can burn skin if worn during application of electrical or magnetic fields.
12. Separate out or restrict storage of multiple strengths of the same patch in clinical areas.

What are the risks and safety concerns?

1. Doses are expressed in numerous ways, eg, strength per day, per hour or per patch. Frequency can vary from daily to weekly replacement and multiple strengths can be available for the one product.
2. Alteration of the delivery of the medicine and/or change in therapeutic effect if the patches are cut or folded to obtain different doses.
3. Omission errors as transdermal patches are often missing from medication histories or may go unnoticed because patients forget to mention them unless prompted and they may not easily be seen as they are often worn under clothing.
4. Over-dosing if old patches are not removed and a second patch is applied because the initial patch is not visible or a different dose form of the same medicine is started.
5. Under-dosing when only the inactive adhesive cover and not the active patch, eg, clonidine (Clonidine transdermal system [Mylan]) is applied.
6. Inadvertent heating of a patch by, for example, fever, forced air warmers, hot water bottles, electric blankets, etc, which can cause lethal over-dosage.
7. Accidental removal of a patch by patients with cognitive impairment when the patch is applied to an area the patient can reach, with or without accidental ingestion of the patch.
8. Risk of misuse or accidental poisoning if used patches are not disposed of appropriately as the patch may still contain active medication after removal.
9. Serious burns when patients have undergone MRI scans still wearing certain medication patches¹⁻³ (the aluminium backing can act as an electrical conductor).
10. Not recording the day, date, time and location of patch application on the medication chart and on the adhesive cover/piece of tape to ensure all clinicians can access this information.

References

1. Institute for Safe Medication Practices. 2004. Burns in MRI patients wearing transdermal patches. *ISMP Medication Safety Alert!* 9(7): 1.
2. Medsafe. 2010. Transdermal medicine patches – risk of burns during MRI scans. *Prescriber Update* 31(3): 21.
3. Durand C, Alhammad A, Willett KC. 2012. Practical considerations for optimal transdermal drug delivery. *Am J Health-Syst Pharm* 69: 116–24.

Case studies

1. A patient was receiving Catapres®-TTS®-1 once weekly, which was not adequately controlling blood pressure (noted as 200/90). The dose was reviewed and changed to Catapres®-TTS®-2 once weekly. The new product was ordered, dispensed and sent to the ward. On receipt, only the overlay protective cover was applied without the active patch underneath. The patient's blood pressure rose to 240/95 before the error was detected.
2. A caregiver applied a fentanyl patch to a buttock (site of pain) and later, when the patient was trying to sleep, a heating pad was applied to the same area. The patient was discovered dead two days later.
3. A fentanyl patch was found on a child's hand in an emergency department when they were admitted with drowsiness, shallow breathing and pin-point pupils. The child's grandmother was using fentanyl patches and had disposed of her used patch in the rubbish bin and the child had picked it out and stuck it on 'like a plaster'. Used fentanyl patches still contain residual fentanyl.
4. A patient with cognitive impairment was admitted to hospital and prescribed their usual fentanyl patch. The patient's old patch was removed and replaced as per the prescription. It was documented as being placed on the patient's outer shoulder blade. However, on different occasions throughout the hospital admission the patch had also been placed on the chest and upper arm. One morning, the patient was noted to have a decreased level of consciousness and (myo)clonic seizure-like movements. During emergency assessment the patient's fentanyl patch was found in their mouth. After removal of the patch from the mouth, the patient recovered.

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