



Medication alert

Transdermal patches

For the attention of: DHB quality and risk managers, DHB aged residential care contract managers

For action by: DHB quality and risk managers, managers of aged residential care facilities

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.

Required organisational action

1. Ensure your organisation has administration guidelines for transdermal patches, which cover these points:
 - Follow specific instructions for the use of each patch.
 - Do not cut patches, unless the specific instructions allow this or specific advice is received from a pharmacist, pain specialist or pain team.
 - Remove all used patches when a new one is applied, as accumulation of the medicine can cause over-dosage.
 - Apply 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).
 - For cognitively impaired patients – apply to the upper back (scapula area; out of reach of the patient) to prevent the patient removing the patch.
 - Ensure the active patch is put on the skin before the protective cover is applied.
 - 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 put on the skin next to the patch.
 - Record day, date, time and location of the applied patch on the medication chart.
 - Record day, date and time on the medication chart when the patch is removed.
 - Ask patients to continue to monitor themselves for adverse effects after patch removal.
 - Dispose of used patches safely by folding in half (sticky sides together) then disposing of them securely, so no one else can use them.
 - Ensure inadvertent heating of a patch does not occur – it can cause lethal over-dosage.
2. Ensure MRI, diathermy, defibrillation and cardioversion procedures include checking for patches prior to the procedure. Some patches can burn skin if worn during application of electrical or magnetic fields:
 - If written information is given to patients prior to these procedures, include information about what to do if a patch is being worn.
3. Separate out or restrict storage of multiple strengths of the same patch in clinical areas to prevent look-alike, sound-alike errors.

Case studies

1. 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.

Remember: Catapres®-TTS® and Clonidine Transdermal System (Mylan) has two parts – the active patch which is applied to the skin and an optional inactive adhesive cover to ensure the patch will not become detached from the skin.

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.

Remember: applying heat to a patch can cause lethal over-dosage.

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'. Unfortunately, the patch still contained some residual fentanyl. Remember: dispose of patches safely as there is a risk that active medicine remaining could cause harm.
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.

Background to this alert

Many medicines are available as transdermal (skin) patches and some potential hazards with their use include the following:

- 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.
- 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.
- Under-dosing when only the inactive adhesive cover and not the active patch, eg, clonidine (Catapres®-TTS®), is applied.
- Inadvertent heating of a patch by, eg, fever, forced air warmers, hot water bottles, electric blankets etc, can cause lethal over-dosage.
- 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.
- Alteration of the delivery of the medicine and/or change in therapeutic effect if the patches are cut or folded to obtain different doses.
- Risk of misuse or accidental poisoning if used patches are not disposed of appropriately, as the patch may still contain active medication after removal.
- Serious burns when patients have undergone MRI scans while still wearing certain medication patches^{1,2} (the aluminium backing can act as an electrical conductor).

Reference

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.

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These recommendations are based on a review of currently available information in order to assist practitioners. Recommendations are general guidelines only and are not intended to be a substitute for individual clinical decision-making in specific cases.