Transdermal Patch Errors

Transdermal patches are adhesive materials applied to intact skin that provide a controlled release of medication doses into the bloodstream absorbed through the skin. They have been developed for a multitude of purposes including smoking cessation, motion sickness, hormone replacement therapy, hormonal contraception, hypertension, angina, pain, depression, overactive bladder, and Alzheimer's disease.

Many errors have been reported with the use of transdermal patches such as:

- **Mistakes in frequency of patch application or removal**
  - Applying the patch at the wrong frequency (i.e., various brands of estradiol have different frequencies, once a week versus twice a week)
  - Removing the patch at the wrong time (i.e., removing a nitroglycerine patch after 24 hours instead of after 12 – 14 hours)
- **Failure to identify patches on the patient's skin**
  - Not removing an old patch when applying a new patch
  - Finding multiple patches on patients that had been left on longer than prescribed
- **Dosing confusion on the label of scopolamine patches**
  - The dose listed on the package of new brands of scopolamine patches has been changed to 1 mg/3 days. This does not match the previous dose of 1.5 mg/3-day as listed in the automated dispensing cabinet (ADC), electronic health record, order sets or medication administration record (MAR). Many scopolamine patch products have changed to a 1 mg/3-day dose; however, others still display the dose as 1.5 mg. One nurse tried cutting the patch down by one-third to apply two-thirds (1 mg) of the patch, however scopolamine patches shouldn't be cut. In another case, 1.5 mg was ordered, and the pharmacy dispensed 1 and a half patches which could lead to overdose. Scopolamine patches should be standardized at the nominal delivery rate of 1 mg/3-days.
- **Inappropriate patch prescribing**
  - Fentanyl patches should only be used in opioid-tolerant patients to manage severe pain that requires daily, round-the-clock, long-term opioid treatment; fentanyl has been prescribed erroneously in opioid-naïve patients.
- **Dispensing wrong dose available in more than one strength**
  - In an order for fentanyl 50 mcg/hour for 72 hours, the 72 hours was mistaken as the strength and a 75 mcg/hour patch was dispensed in error.
- **Patch cover applied without the medication patch**
  - Clonidine patches (Catapres-TTS) are packaged with a cover that may be applied over the actual medication patch. There have been reports of the clonidine cover being placed directly on the patient skin without the actual medication. Once removed from the packaging, the clonidine patch is a different size, shape, and color than the adhesive cover but there is nothing that specifies which is which. The adhesive cover is optional and should only be used if the clonidine patch begins to separate from the skin. Staff should be instructed to apply the medicated patch first, followed by the adhesive cover, as needed.

Reference

1. Institute for Safe Medication Practices. (2021). *Nurse Advise-ERR.* Retrieved from Institute for Safe Medication Practices: https://www.ismp.org/nursing/medication-safety-alert-may-2021

The following strategies will help prevent errors associated with transdermal patches:

- **During admission**
  - Collect a detailed medical history to identify all medications the patient is taking, specifically the use of any type of patch. Identify the current location of the patch and when it was applied.
  - Perform a full skin assessment, looking specifically for patches. Remember that many will be small and either clear, beige, or close to the patient's skin tone.
  - Verify and document the patient's opioid status (naïve versus tolerant) and the type of pain (acute versus chronic).
- **Prescribing and order verification**
  - Verify the indication and confirm the appropriateness of patch use for each patient.
  - Ensure the correct patch application frequency is included as the ONLY option in the electronic prescribing system.
  - Specific patches:
    - Estradiol – include brand names and specific frequency.
    - Fentanyl – do not include duration of medication delivery in the drug description field in the electronic health record as this could be confused with the dose. Prevent ordering of fentanyl patches for opioid-naïve patients with acute pain.
    - Opioid – default order entry systems to the lowest initial starting dose and longest frequency.
- **Patch dispensing**
  - Utilize barcode scanning during the dispensing process to ensure correct selection.
  - Identify which patches can be safely cut and which cannot and include that information on the medication administration record, as necessary.
  - Specific patches:
    - Clonidine – dispense the medication patch and adhesive cover in a zip lock bag with a label explaining each component of the product.
    - Fentanyl – do not store fentanyl patches in ADCs or as unit stock in clinical areas where acute pain is primarily treated (i.e., emergency department, operating room, post-anesthesia care unit, procedural areas).
    - Scopolamine – change all prescriber and pharmacy order entry systems, order sets, and MARs to indicate the correct drug delivery rate of 1 mg over 3 days and confirm the patch label matches the new dose expression.
- **Patch administration and removal**
  - Utilize barcode scanning to ensure correct product selection.
  - On MARs, prompt user for documentation of the location of each medication patch applied and link all entries for medication patches to an order for removal at the appropriate interval.
  - Implement a documentation prompt each shift to verify placement of each medication patch and to record the location, if needed.
  - Provide secure waste disposal systems for patches containing controlled substances.
  - Specific patches:

Reference

1. Institute for Safe Medication Practices. (2021). *Nurse Advise-ERR.* Retrieved from Institute for Safe Medication Practices: https://www.ismp.org/nursing/medication-safety-alert-may-2021

    - Opioid – confirm patient's opioid status (naïve versus tolerant) prior to administering.
    - Clonidine – include a note within the MAR to remind nurses to apply the medication patch, not just the cover. If the adhesive cover is used, label it with the drug name, strength, and date, before applying it.
- **Patient/caregiver education**
    - Provide verbal and written education to patients/caregivers and verify understanding.
    - Urge patients/caregivers to read the Patient Instructions before using the patches.
    - Instruct patients/caregivers to discard used or unneeded patches per the Patient Instructions.

Reference

1. Institute for Safe Medication Practices. (2021). *Nurse Advise-ERR.* Retrieved from Institute for Safe Medication Practices: https://www.ismp.org/nursing/medication-safety-alert-may-2021