ARE TOPICAL PATCHES SAFE DURING MRI OR CT SCANS?

Darrell T. Hulisz, PharmD

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Question
We have recently discovered that all topical patches are being removed (and disposed of) by diagnostic personnel from patients undergoing a magnetic resonance imaging (MRI) or computed tomography (CT) scan. As a result, patients may experience a break in therapy of 1-2 days. This practice seems to go back to the early patches that had a thin metal layer (no longer an issue). Is there any reason to be concerned about patches being exposed to MRI or CT?

Response from Darrell T. Hulisz, PharmD
Associate Professor, Department of Family Medicine, Case Western Reserve University School of Medicine, University Hospitals, Case Medical Center, Cleveland, Ohio

Transdermal drug delivery offers a unique way to administer medications to patients who either are unable to tolerate oral therapies, have difficulty with medication adherence, or who need to localize treatment to a specific area. Transdermal drug patches are generally composed of 3 layers: a liner that is discarded before application, the drug itself, and the backing furthest from the skin. Some transdermal systems have a metallic component, which allows controlled absorption of the medication through the skin. Aluminum is commonly used and is an excellent conductor of heat.

When patients undergo a magnetic resonance imaging (MRI) scan, radiofrequency pulses generate electrical currents that can overheat any conductive substance within the magnetic resonance system.[1] If a patient is wearing a patch containing aluminum, the overheated metal may cause excessive heating, causing local burns and irritation to the skin underneath the patch.[2,3] This may be especially evident in patients with thinner skin, such as the elderly or those on chronic topical corticosteroids.

Ideally, patch removal prior to the MRI should be done in consultation with the prescriber and pharmacist to determine whether an interruption in
drug delivery could be harmful to the patient. A pharmacist can judge whether the patch should be discarded or if it can be reused after proper storage.

The following transdermal products do not contain metal on the patch itself; however, some may contain metal in the liner that is discarded prior to application. Thus, the following products are considered _SAFE_ to use during an MRI procedure[4]:

- Alora* (estradiol)
- Climara (estradiol)
- ClimaraPro* (estradiol plus levonorgestrel)
- Esclim (estradiol)
- Estraderm* (estradiol)
- Lidoderm (lidocaine)
- Menostar* (estradiol)
- Minitran (nitroglycerin)
- Nitro-Dur (nitroglycerin)
- OrthoEvra (estradiol plus norelgestromin)
- Oxytrol* (oxybutynin)

*contain metal in liner (should be removed before application of patch)

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References


PDR Electronic Library: Thomson Micromedex, Greenwood Village, Colorado.

Darrell T. Hulisz, PharmD, Associate Professor, Department of Family Medicine, Case Western Reserve University School of Medicine, University Hospitals, Case Medical Center, Cleveland, Ohio

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