

Headache Toolbox

Sumatriptan Iontophoretic Patch for Migraine



Sumatriptan delivered in an electric patch form applied to the skin was approved by the Federal Drug Administration (FDA) in 2013 for the acute treatment of migraine. About 25 years ago, sumatriptan was the first drug in the medication class of triptans to be approved for the treatment of migraine. Sumatriptan already comes in a tablet, injectable form, nasal spray, and in at least 14 countries, a suppository. The sumatriptan patch is called brand name *Zecuity* and is made by Teva Pharmaceutical Industries LTD (Petach Tikva, Israel). It is especially suited to those migraineurs who have ongoing nausea accompanying their headaches, those for whom a pill will not work, and those with a need for a non-oral medication to bypass the gut.

The sumatriptan patch consists of a single-use patch that comes in a foil packet. After tabs are pulled to expose a small well of sumatriptan and another well of salt solution, these areas are each rubbed to release the two compounds. The patch is placed on the upper arm or thigh, in an area where there are no tattoos or skin irritation. A tiny battery embedded in the patch is then turned on by pushing a button. A red light comes on, indicating the patch is activated.

The patch must be turned on within 15 minutes of putting it together. The patch remains functioning and in place for 4 hours. A microprocessor adjusts to the skin, allowing continuous delivery of sumatriptan in a controlled

dose. A very mild electrical current drives sumatriptan through the skin's surface continuously, delivering a total dose of 6.5 mg. This electric patch is referred to as an "iontophoretic patch." Up to two patches may be used in 1 day.

The patch is better for people with slow onset migraine, and in those with nausea with their headaches. One common problem with tablet forms of migraine treatment is that they are frequently poorly absorbed because of a phenomena called gastroparesis, in which the gut slows down and does not move normally during a migraine, contributing to nausea and less reliable absorption of oral medications. The patch, as well as injectable, inhalable, suppository, and nasal formulations of migraine medications, are often more suitable for patients who have gastroparesis with their migraines, often suggested by the presence of the nausea itself.

Testing of the patch included 800 migraine patients with and without aura who received either an active patch containing sumatriptan or a placebo patch containing no medicine. In this trial, 18% of patients using the patch had complete relief of their headaches by 2 hours, compared with 9% using a placebo nonfunctional patch. After 2 hours, 53% of patients using the patch had a decrease in their headache pain compared to 29% of those with

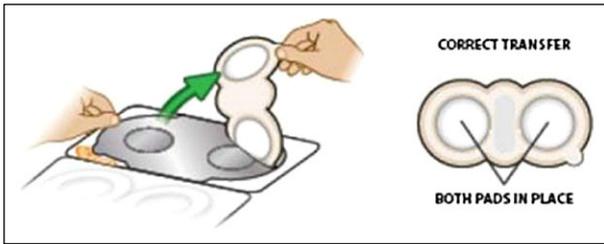


Figure.—Illustration showing how the sumatriptan iontophoretic patch appears after correct assembly of the device. Battery device is in the center of the 2 pads. (Reproduced [Adapted] with permission from Meadows KP, Pierce M, O’Neill C, Foster S, Jennings C. Sumatriptan transdermal system can be correctly assembled and applied during migraine attacks. *Headache*. 2014;54:850-860.)

the placebo patch. No nausea was reported after 2 hours in 84% of patients using the active patch compared with 63% using the placebo.

In a second trial of 530 migraine patients, patients were twice as likely to be pain free at 2 hours with the patch vs placebo. At 1 hour, pain relief (pain improved or absent) was 29% with the patch vs 19% with placebo, and nausea was absent in 71% vs 58% with placebo.

Side effects reported in more than 5% of patients were: skin irritation including pain, tingling, warmth, and itching. About 2% of patients experienced symptoms common to triptans, such as chest and neck pressure and

tightness sensations. The sumatriptan patch, as with all triptans, should not be used by individuals with known or suspected blood vessel/vascular disease, as they all cause a temporary narrowing of blood vessels in the heart and brain, not usually significant in healthy individuals.

The sumatriptan patch is a novel means of delivering sumatriptan, a highly effective medication used to treat acute migraine. Because the iontophoretic patch bypasses the gut, it is especially appropriate for those who have a gradual onset of migraine accompanied by nausea. It has a slow onset of action, and therefore would probably be less advantageous for those who have rapid onset of severe migraine pain and vomiting.

The iontophoretic sumatriptan patch is not available for purchase in the United States as of September 2014. It is anticipated to become available in early or mid-2015.

Acknowledgments: We thank the Osher Center for Integrative Medicine at Brigham and Women’s Hospital for their support of this project, specifically in providing the clinical space for patient evaluations and for the MBSR classes.

Deborah E. Tepper, MD
Cleveland Clinic Headache Center
Cleveland, OH, USA



To find more resources, please visit the American Migraine Foundation