

PATIENT EDUCATION AND SELF-ADVOCACY: QUESTIONS AND RESPONSES ON PAIN MANAGEMENT

Edited by Yvette Colón

Capsaicin

Amitabh Goswami

ABSTRACT

Questions from patients about analgesic pharmacotherapy and responses from the authors are presented to help educate patients and make them more effective self-advocates. The topics addressed in this issue are postherpetic neuralgia and capsaicin and a discussion about symptoms, causes, and treatments is presented.

KEYWORDS capsaicin, chickenpox, chili peppers, postherpetic neuralgia, quenza, varicella-zoster virus, shingles

QUESTION FROM A PATIENT

I'm a 68-year-old woman who has been suffering from shingles for over 3 years. I have tried many medications and treatments, from nerve agents to acupuncture. None of them have worked. I've heard of people trying creams made from chili peppers. Is this real and would it work for my type of pain?

ANSWER

Neuralgia is severe pain along the course of a nerve. The pain occurs because of a change in neurological structure or function due to irritation or damage of a nerve. Postherpetic neuralgia (PHN) is a painful condition that affects the nerve fibers and skin. PHN is a complication of shingles. Shingles is caused by the herpes varicella-zoster virus. This virus also causes chickenpox. Most of us get chickenpox during childhood, but after we recover the virus remains inactive in our nervous system. Our immune system stops the virus from becoming active.¹ However, later in life the herpes varicella-zoster virus may become reactivated,

causing shingles. Shingles is an infection of a nerve and the area of skin around it.

Usually the nerves of the chest and abdomen on one side of the body are affected. If the pain caused by shingles continues after the shingles is over (within 2 to 4 weeks), it is known as PHN. The risk of PHN increases with age, primarily affecting people over the age of 60. Effective treatment of PHN is difficult, and the pain can last for months or even years.¹

Symptoms

The signs and symptoms of PHN are generally limited to the area of your skin where the shingles outbreak first occurred. This is most commonly in a band around your trunk (chest), usually on just one side of your body. The symptoms include pain, sensitivity to light touch, itching and numbness, and weakness or paralysis. The pain associated with PHN most commonly has been described as burning, sharp and jabbing, or deep and aching. People who have PHN often cannot bear even the touch of clothing on the affected skin. Less commonly, PHN can produce an itchy feeling or numbness. In rare cases, you might also experience muscle weakness or paralysis if the nerves involved also control muscle movement.²

Causes

At the time of an initial infection of chickenpox, some of the virus can remain dormant (quiet) in some of

Amitabh Goswami, DO, MPH, is a Pain Medicine Fellow, Department of Anesthesiology and Pain Medicine, University of California at Davis Medical Center, Sacramento, California, USA.

Address correspondence to: Dr. Amitabh Goswami, UC Davis Medical Center, Lawrence J. Ellison Ambulatory Care Center, 4860 Y Street, Suite 3020, Sacramento, CA 95817, USA (E-mail: painfellowship@ucdmc.ucdavis.edu).

your body's nerve cells. Years later, the virus may re-activate, causing shingles.

PHN occurs if your nerve fibers are damaged during an outbreak of shingles. Damaged fibers aren't able to send messages from your skin to your brain as they normally do. Instead, the messages become confused and exaggerated, causing chronic, often excruciating pain that may persist for months or even years.

Risk factors for PHN include older age, immunosuppression (weakened immune system), female gender, presence of rash, greater rash severity, and greater acute pain. Although PHN may decline over time, chronic pain continues indefinitely in approximately 10% of those afflicted. For many patients, the chronic neuropathic (nerve) pain has a profound negative effect on function and quality of life. Numerous treatments are considered, including both topical therapies and systemic treatment with a variety of drugs.²

Treatment

There is no single treatment that relieves PHN in all people. In many cases, it may take a combination of treatments to reduce the pain.

There are several treatments approved by the Food and Drug Administration (FDA) for pain after shingles. There are pills, which need to be taken daily and work by traveling through the body, acting on the nervous system. There is also a topical patch product that is applied to the site of pain every day and left on for up to 12 hours.³

Capsaicin is the active ingredient in hot chili peppers and has been in clinical use as a cream to treat various types of painful conditions. Low concentration topical capsaicin has been used for decades as a treatment for PHN. Capsaicin provides pain reduction by acting on the damaged nerves in the skin that cause pain after shingles.

In recent years, a high concentration (8%) capsaicin patch has been developed, and approved for PHN based on two randomized controlled studies demonstrating the effectiveness and safety of a 1-hour application for PHN in nontrigeminal dermatomal distributions. This treatment may reduce pain for many months and the controlled trials suggest that a typical responder will experience improvement for approximately 3 months.³

Application of Qutenza

Qutenza contains pure, concentrated, synthetic (artificial) capsaicin capable of producing irritation of the eyes, skin, or other parts of the body. It must be han-

dled by a doctor or health care professional who is familiar with proper qutenza administration, handling it with special gloves, and disposal to prevent accidental contact with the medication.²

Your doctor will identify the areas where you're experiencing pain and sensitivity. These areas will be numbed with a topical numbing agent (anesthetic) and this anesthetic will be left on the skin until the skin is properly anesthetized (this time can vary). Your doctor may prescribe the topical numbing agent to be applied before you arrive for the qutenza procedure.

The topical anesthetic will be removed and the qutenza patch or patches will be applied. This is usually done in a pain doctor's procedure clinic. The patient is placed on monitors: EKG (electrocardiography; heart rhythm and rate), blood pressure, and oxygen saturation throughout the duration of the procedure. During this time, your doctor may also administer other medications through an intravenous (IV) injection to help tolerate the procedure. These agents may be midazolam (a benzodiazepine for mild sedation/relaxation) and/or fentanyl (an opioid for pain control). After 60 minutes, the patches will be removed. The final step is to cleanse your treatment area by applying a cleansing gel, which will be left on for approximately 1 minute before it is removed. Then the treatment area is gently washed with mild soap and water.²

Side Effects

The expected side effects from qutenza are redness and a burning sensation where qutenza is applied, similar to the feeling many people get from hot chili peppers. A numbing skin cream is applied to the site of pain prior to applying qutenza to reduce treatment-related discomfort. These side effects are most common during and shortly after the treatment and generally last a few hours, though they can last longer. Your doctor or health care professional may use cold packs or pain medicine to reduce treatment-related discomfort. The most common serious side effects during qutenza treatment are pain where qutenza is applied and increased blood pressure.⁴

Effectiveness

In a recent systematic review, capsaicin 0.075% cream demonstrated statistically significant benefit in postherpetic neuralgia, postsurgical neuropathies, and diabetic neuropathy compared with placebo.⁵ The analgesic (painkiller) effect of capsaicin 0.075% cream has been demonstrated throughout 4 to 12 weeks of study follow-up,

although it may take weeks of application to achieve significant benefit. Although studies demonstrate its effectiveness in musculoskeletal pain, capsaicin 0.025% cream has not been adequately studied for neuropathic pain. The efficacy of the single high-dose capsaicin 8% patch has been observed up to 12 weeks in published data.^{6–8} It is effective for postherpetic neuralgia. Nevertheless, no head-to-head trials have compared the capsaicin 8% patch with capsaicin 0.075% cream.

The efficacy of the capsaicin 8% dermal patch was maintained for up to 1 year in studies in which patients could receive up to three or four repeat treatments. Capsaicin dermal patch was generally well tolerated in clinical trials. The most common side effects were transient (passing away in time), mostly mild to moderate, with 63% erythema (redness at the application site) and 42% pain reactions.^{6–8}

Conclusion

PHN is the most common complication of herpes zoster. It occurs in approximately 30% of patients older than 80 years of age and in approximately 20% of patients 60 to 65 years old. Reducing pain during the acute (short-term) phase of herpes zoster may stop the initiation of the mechanisms that cause chronic pain.⁹

If the condition develops, treatment focuses on preventing a chronic pain syndrome. Several medications have provided effective pain relief for PHN. The Food and Drug Administration (FDA) has approved Qutenza for the management of neuropathic

pain due to PHN. Qutenza works by targeting certain pain nerves in the area of skin where pain is being experienced. Under the guidance of a physician, it can be an effective treatment option for patients with a history of PHN and chronic pain.

Declaration of interest: The author reports no conflict of interest. The author alone is responsible for the content and writing of this paper.

REFERENCES

- [1] Fashner J, Bell A. Herpes zoster and postherpetic neuralgia: prevention and management. *Am Fam Physician*. 2011;83:1432–1437.
- [2] Qutenza prescribing information. Available at: <http://www.qutenza.com/docs/qutenza.full.PI.pdf>. Accessed February 16, 2012.
- [3] Mayo Foundation for Medical Education and Research. Available at: <http://www.mayoclinic.com/health>. Accessed June 9, 2011.
- [4] Jorge LL, Feres CC, Teles VEP. Topical preparations for pain relief: efficacy and patient adherence. *J Pain Res*. 2011;4:11–24.
- [5] Anand P, Bley K. Topical capsaicin for pain management: therapeutic potential and mechanisms of action of the new high concentration capsaicin 8% patch. *Br J Anaesth*. 2011;107:490–502.
- [6] Jones VM, Moore KA, Peterson DM. Capsaicin 8% topical patch: a review of the evidence. *J Pain Palliat Pharmacother*. 2011;25:32–41.
- [7] Derry S, Lloyd R, Moore RA, McQuay HJ. Topical capsaicin for chronic neuropathic pain in adults. *Cochrane Database Syst Rev*. 2009;(4):CD007393.
- [8] Jones, V, Moore K, Peterson D. Capsaicin 8% topical patch (Qutenza)—a review of the evidence. *J Pain Palliat Care Pharmacol*. 2011;25:32–41.
- [9] Wallace M, Pappagallo M. Qutenza: a capsaicin 8% patch for the management of postherpetic neuralgia. *Expert Rev Neurother*. 2011;11:15–27.