

Shingles

When the itchy red spots of childhood *chickenpox* disappear and life returns to normal, the battle with the virus that causes chickenpox seems won. But for too many of us this triumph of immune system over virus is temporary. The virus has not been destroyed but remains dormant in our nerve cells, ready to strike again later in life. This second eruption of the chickenpox virus is the disease called shingles. The virus that causes chickenpox/shingles is *varicella-zoster virus* or VZV

You can't catch shingles from someone else. You must already have been exposed to chickenpox and harbor the virus in your nervous system to develop shingles. When reactivated, the virus travels down nerves to the skin, causing the painful shingles rash. Because the shingles rash contains active virus particles, someone who has never had chickenpox can catch it from exposure to a shingles rash. About 25 percent of all adults, mostly otherwise healthy, will get shingles during their lifetimes, usually after age 40. The incidence increases with age so that shingles is 10 times more likely to occur in adults over 60 than in children under 10. People with compromised immune systems - from use of immunosuppressive medications such as prednisone, from serious illnesses such as cancer, or from infection with HIV - are at special risk of developing shingles. These individuals also can have re-eruptions and some may have shingles that never heals. Most people who get shingles re-boost their immunity to VZV and will not get the disease for another few decades.

The first sign of shingles is often burning or tingling pain, or itch, in one particular location on only one side of the body. After several days or a week, a rash of fluid-filled blisters, similar to chickenpox, appears in one area on one side of the body. Shingles pain can be mild or intense. Some people have mostly itching; some feel pain from the gentlest touch or breeze. The most common location for shingles is a band, called a dermatome, spanning one side of the trunk around the waistline. The second most common location is on one side of the face around the eye and on the forehead. However, shingles can involve any part of the body. The number of lesions is variable. Some rashes merge and produce an area that looks like a severe burn. Other patients may have just a few scattered lesions that don't cause severe symptoms. For most healthy people, shingles rashes heal within a few weeks, the pain and itch that accompany the lesions subside, and the blisters leave no scars. Other people may have sensory symptoms that linger for a few months.

Shingles attacks can be made less severe and shorter by using prescription antiviral drugs: *acyclovir*, *valacyclovir*, or *famcyclovir*. Acyclovir is available in a generic form, but the pills must be taken five times a day, whereas valacyclovir and famcyclovir pills are taken three times a day. Antiviral drugs can reduce by about half the risk of being left with *postherpetic neuralgia* which is chronic pain that can last for months or years after the shingles rash clears. Other treatments to consider are anti-inflammatory corticosteroids such as *prednisone*. These are routinely used when the eye or other facial nerves are affected.

In May 2006, the Food and Drug Administration approved a VZV vaccine (Zostavax) for use in people 60 and older who have had chickenpox.

Researchers found that giving older adults the vaccine reduced the expected number of cases of shingles by half. And in people who still got the disease despite immunization, the severity and complications of shingles were dramatically reduced. Sometimes, particularly in older people, shingles pain persists long after the rash has healed. This postherpetic neuralgia can be mild or severe - the most severe cases can lead to insomnia, weight loss, depression, and disability. Postherpetic neuralgia is not directly life-threatening. About a dozen medications in four categories have been shown in clinical trials to provide some pain relief. These include:

Tricyclic antidepressants (TCAs): TCAs are often the first type of drug given to patients suffering from postherpetic neuralgia. The TCA amitriptyline was commonly prescribed in the past, but although effective, it has a high rate of side effects. *Desipramine* and *nortriptyline* have fewer side effects and are therefore better choices for older adults, the most likely group to have postherpetic neuralgia. Common side effects of TCAs include dry eyes and mouth, constipation, and grogginess. People with heart arrhythmias, previous heart attacks, or narrow angle glaucoma should usually use a different class of drugs.

Anticonvulsants: Some drugs that reduce seizures can also treat postherpetic neuralgia. An antiseizure medication, *carbamazepine*, is effective for postherpetic neuralgia but has rare, potentially dangerous side effects so a newer anticonvulsant, *gabapentin*, is far more often prescribed. Side effects of the drug include drowsiness or confusion, dizziness, and sometimes ankle swelling.

Opioids: Opioids are strong pain medications. They include oxycodone, morphine, tramadol, and methadone. Opioids can have side effects - including drowsiness, mental dulling, and constipation - and can be addictive.

Topical local anesthetics: Local anesthetics applied directly to the skin of the painful area affected by postherpetic neuralgia are also effective. *Lidocaine*, the most commonly prescribed, is available in cream, gel, or spray form. It is also available in a patch that has been approved by the Food and Drug Administration for use specifically in postherpetic neuralgia. *Capsaicin* cream may be somewhat effective and is available over the counter, but most people find that it causes severe burning pain during application.

Ophthalmic shingles -- lesions in or around the eye and forehead -- can cause painful eye infections, and in some cases immediate or delayed vision loss. Shingles infections within or near the ear (Ramsay-Hunt syndrome) can cause hearing or balance problems as well as weakness of the muscles on the affected side of the face. In rare cases, shingles can spread into the brain or spinal cord and cause serious complications such as stroke or meningitis. People with shingles need to seek immediate medical evaluation if they notice neurological symptoms outside the region of the primary shingles attack. People who are *immunosuppressed*, whether from diseases such as HIV or medications, have an increased risk of serious complications from shingles. Most commonly, they get shingles that spreads to involve more parts of the body, or shingles rashes that persist for long periods or return frequently. Many such patients are helped by taking antiviral medications on a continuous basis.

VZV infection during pregnancy poses some risk to the unborn child, depending upon the stage of pregnancy. If a pregnant woman gets chickenpox between 21 to 5 days before giving birth, her newborn can have chickenpox at birth or develop it within a few days. But the time lapse between the start of the mother's illness and the birth of the baby generally allows the mother's immune system to react and produce antibodies to fight the virus. These antibodies can be transmitted to the unborn child and thus help fight the infection. Still, a small percent of the babies exposed to

chickenpox in the 21 to 5 days before birth develop shingles in the first 5 years of life because the newborn's immune system is not yet fully functional and capable of keeping the virus latent.

If the mother contracts chickenpox at the time of birth, the mother's immune system has not had a chance to mobilize its forces. And although some of the mother's antibodies will be transmitted to the newborn via the placenta, the newborn will have little ability to fight off the attack because its immune system is immature. If these babies develop chickenpox as a result, it can be fatal. They are given zoster immune globulin, a preparation made from the antibody-rich blood of adults who have recently recovered from chickenpox or shingles, to lessen the severity of their chickenpox.

Medical research on shingles has two main goals. The first is to develop drugs to fight the disease and to prevent or treat its complications, especially postherpetic neuralgia. The second is to understand the disease well enough to prevent it, especially in people at high risk. Other research is aimed at finding new methods for identifying the biological differences between people who suffer from or escape long-term postherpetic neuralgia pain after shingles. The goals of this research are to identify ways to reduce the risk of postherpetic neuralgia after shingles.

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