Shingles Vaccination Program
Question and Answers

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Adapted from the Immunization Action Coalition (with permission) and the Centers for Disease Control and Prevention (CDC).

The Disease

Overview

1) What causes shingles?
Shingles, or herpes zoster, is caused by the varicella-zoster virus (VZV), which, during first infection, produces chickenpox (varicella). After initial infection, the virus remains hidden (latent) in the nerve endings of the body until it reactivates, producing zoster or “shingles.” Shingles is most common after the age of 50 and the risk of developing the disease increases with advancing age. Shingles causes numbness, itching or severe pain followed by clusters of blister-like skin sores along the distribution of nerve roots of one side of the face or body. The pain can persist for weeks, months or years after the rash heals and is then known as post-herpetic neuralgia (PHN).

2) How do you know if you have shingles?
Often the first symptoms of shingles may be numbness, tingling, itching, or pain in one particular location on one side of the face or body. In the pre-eruption stage, diagnosis may be difficult, and the pain can be so severe that it may be mistaken for pleurisy, kidney stones, gallstones, appendicitis, or even a heart attack, depending on the location of the affected nerve. The virus infects the skin cells and creates a painful, red rash that resembles chickenpox. Doctors can distinguish shingles from chickenpox by the way the spots are distributed. The rash usually appears in a well-defined band on one side of the body, typically the torso; or on one side of the face, around the nose and eyes. The rash usually begins as clusters of small bumps that soon develop into fluid-filled blisters (vesicles). The blisters fill with pus, break open, and form crusty scabs. In about four or five weeks, the disease will have run its course, and the skin will begin healing. Even after the blisters have healed the site may remain painful to the slightest touch or breeze. It is usually a very painful rash, and typically people can't bear clothes touching the affected area.

3) How serious is shingles, especially to the Armed Forces?
Most healthy individuals make an uneventful recovery. Although it's difficult to resist scratching the itchy rash, it is best to keep hands off, to prevent a bacterial infection that may require antibiotic treatment. After an infection, the skin may be left with significant scarring, which may be serious enough to require plastic surgery.

Another complication, Ramsay Hunt syndrome, occurs when the varicella-zoster virus spreads to the facial nerve, causing facial paralysis, intense ear pain and vesicles in the auditory canal and outer ear structures (auricle). The rash might appear on the outer ear, inside the ear canal, on the soft palate (part of the roof of the mouth), or around the mouth and on the face, neck, and scalp. The hearing loss, vertigo, and facial paralysis that may result are usually, but not always, temporary.

Occasionally, the rash will appear as a single spot or cluster of spots on the tip of the nose. This symptom is called Hutchinson's sign. The ophthalmic nerve is often involved and the eye may become affected, causing temporary or permanent blindness. If the eye is affected (ophthalmic herpes) or looks like it may become affected, an eye specialist (ophthalmologist) should be consulted.

Shingles is a serious threat to immunosuppressed individuals — for example, those with HIV infection, individuals who are receiving cancer treatments and those that have received organ transplants. In those whose immune systems are extremely weakened, the varicella zoster virus can also spread to the internal organs and affect the lungs, central nervous system and the brain, possibly leading to death.

4) Is there a treatment for shingles?
Although viral diseases can't be cured, doctors can prescribe oral antiviral medications, such as Zovirax® (acyclovir), Famvir® (famciclovir) and Valtrex® (valacyclovir), that help control the infection by hindering reproduction of the virus in the nerve cells. Antiviral drugs may also help prevent the painful after-effects of shingles known as postherpetic neuralgia or PHN. Other treatments for PHN include steroids, antidepressants, anticonvulsants, and topical agents.

To relieve pain, the doctor may recommend over-the-counter analgesics (pain-relieving drugs), such as ibuprofen and naproxen, or prescription drugs, such as indomethacin, all members of a class of medications known as nonsteroidal anti-inflammatory drugs. Acetaminophen is also commonly used to relieve the pain. If pain is severe, doctors may add stronger analgesics, such as codeine or oxycodone. If any of the blisters become infected it may take longer for the site to heal. Infections may be treated with antibiotics, in the form of a cream, or taken by mouth.

In the case of ophthalmic herpes zoster, treatment is likely to involve specific anti-viral eye drops, and possibly treatment by mouth as well. In the event of long-lasting pain (PHN), a pain specialist could be consulted.

5) How are shingles and chickenpox related?
Both chickenpox and shingles are caused by the same virus (varicella). After a person has had chickenpox, the virus stays in the body permanently. About 10%-20% of all people who have been infected with chickenpox later develop the disease known as herpes zoster, or shingles. Symptoms of shingles are pain, itching, blisters, and loss of feeling along a nerve. Most cases occur in people older than 50, and the risk of developing shingles increases with age.

6) What should I do if I get shingles?
Contact your health care provider as soon as possible to discuss treatment with antiviral medications. These medications are most effective if given as soon as possible after rash onset.

Rate and Spread

1) How common is shingles in the United States?
In the United States about 300,000 to 600,000 people suffer from shingles each year, and the incidence is expected to increase as the population ages. Because it is so easy to catch chickenpox, almost every adult in the United States has been infected. Anyone who has been affected by chickenpox could develop shingles, though not all will. About 50 percent of those who live to age 85 will get the disease.

2) How is shingles spread from one person to another?
People who have had a case of the chickenpox or who have been vaccinated for chickenpox cannot “catch” shingles from an infected person. However, people who have never had a case of chickenpox or have never been vaccinated for chickenpox, may be infected if exposed to a person with active shingles leading to a case of chickenpox. You must have had chickenpox to develop shingles so it is not possible to pass shingles from person to person. Varicella-zoster may be spread by direct contact with the lesions or with infected material.

3) How long does it take to develop symptoms of shingles?
The varicella virus may lie dormant for years or decades in the nerve root and reactivate when the immune system becomes weakened by age or disease.

4) How long does an outbreak of shingles last?

The rash begins with reddish bumps. In a few days, these bumps turn into fluid filled blisters, crust over and dry out after 7 to 10 days. Even though the rash gets better or goes away in a few weeks, the pain may last longer. In most people, the pain goes away in 1 to 3 months.

5) How long is a person with shingles contagious?
A person exposed to a patient with shingles will not get shingles but may get chickenpox. The virus is present at the site of the rash and is contagious for a week after the appearance of lesions (blisters). A person is not infectious before blisters appear or when suffering from PHN.

6) Can you get shingles more than once?
Shingles is caused by a reactivation of the dormant virus in the nerves of people who have previously had chickenpox. As a result shingles can unfortunately occur more than once. People have further attacks of shingles, especially at times when they feel run down. These attacks may affect a different part of the body.

The Vaccine

Immunization

1) What kind of vaccine is it?
Zostavax® is a single-dose, sterile, preservative-free, live, attenuated vaccine manufactured by Merck & Co. Each dose of Zostavax® contains a minimum of 19,400 plaque-forming units (PFU) of the Oka/Merck strain of varicella-zoster virus (VZV) at expiry. The same manufacturing process used for Zostavax® is used to manufacture Varivax®, the vaccine for the prevention of chickenpox, with the exception that Zostavax® contains higher amounts of the attenuated Oka/Merck vaccine virus in order to elicit an appropriate immune response.

2) What side effects have been reported with this vaccine?
The most common side effects reported in clinical studies include redness, pain, swelling, itching, warmth, and bruising at the injection site, and headaches. In the overall study population, serious adverse events occurred at a similar rate (1.4%) in subjects vaccinated with Zostavax® or placebo.

3) How effective is this vaccine?
In the Shingles Prevention Study, half of the participants were assigned a single injection of the zoster vaccine and the other half a placebo vaccine. Neither the researchers nor the participants knew who received vaccine and who received placebo until after the study was over. During an average of more than three years of follow-up, the vaccine reduced the incidence of shingles by 51 percent: 642 cases of shingles occurred among those in the placebo group compared with only 315 in the vaccinated group. Among all vaccine recipients, the total burden of pain and discomfort due to shingles was 61 percent lower than in placebo recipients.

Zoster vaccine reduced the incidence of shingles by 63.9% in subjects aged 60 – 69 years of age and 37.9% in people aged 70 years or older.

4) Can the vaccine protect you if you've already been exposed to shingles?
If you have had a case of shingles the zoster vaccine may protect you from future cases of the disease. However, zoster vaccine cannot be used to treat an active case of shingles.

5) Can the vaccine cause chickenpox?
Because this vaccine is made from a live, but weakened virus, about 1% of recipients develop a mild

form of the disease, consisting of a limited rash, most often with only 5-6 blisters. Usually there is no fever. These people are then protected from the more serious, naturally occurring form of the virus.

6) Can the vaccine cause shingles?
Yes. However, a study conducted among children with leukemia determined that after receiving the vaccine these children were much less likely to develop shingles than children who had prior natural chickenpox. Available information from healthy children and adults suggest that shingles is less common in vaccinated healthy people compared with people who have had natural chickenpox.

7) Should military personnel be tested before vaccination to see if they are already immune to shingles?
Blood tests can determine whether a person has antibodies to varicella infection, but do not specifically identify if they will get shingles, because the virus can lay dormant for decades.

8) Who should get this vaccine?
The most common side effects reported in clinical studies include redness, pain, swelling, itching, warmth, and bruising at the injection site, and headaches. In the overall study population, serious adverse events occurred at a similar rate (1.4%) in subjects vaccinated with Zostavax® or placebo.

Administration

1) How is this vaccine given?
Zostavax is given as a single 0.65-mL subcutaneous dose. Zostavax is indicated for prevention of herpes zoster (shingles) in individuals 60 years old and older.

2) If I think a service member has been exposed to shingles, what should I do as a medic or corpsman?
Refer the service member to a health care provider for evaluation for special consideration of the chickenpox vaccine (not shingles vaccine).

Remember Shingles cannot be passed from one person to another. However, the virus that causes shingles (VZV) can be spread from a person with active shingles to a person who has never had chickenpox through direct contact with the rash. The person exposed would develop chickenpox, not shingles. The virus is not spread through sneezing, coughing or casual contact. A person with shingles can spread the disease when the rash is in the blister-phase. Once the rash has developed crusts, the person is no longer contagious. A person is not infectious before blisters appear or with PHN (pain after the rash is gone).

Contraindications

1) Who should NOT receive the shingles vaccine?
Zostavax is contraindicated in people with a history of anaphylactic reaction to gelatin, neomycin, or any other component of the vaccine; with a history of primary or acquired immunodeficiency states including leukemia, lymphomas of any type, or other malignant neoplasms affecting the bone marrow or lymphatic system; with AIDS or other clinical manifestations of infection with human immunodeficiency viruses; and with active untreated tuberculosis. Zoster vaccine is also contraindicated in people on immunosuppressive therapy including high-dose corticosteroids and in women who are or may be pregnant.

2) What about pregnant or breastfeeding women?

Zoster vaccine is not recommended for use in women who are pregnant or think that they may be pregnant. Many vaccinations are routinely deferred until after pregnancy. Pregnancy should be avoided for three months after vaccination. Some viruses are excreted in human milk; however, it is not known whether VZV is secreted in human milk. Therefore, because some viruses are secreted in human milk, caution should be exercised if zoster vaccine is administered to a nursing woman.

3) Sources:

The Immunization Action Coalition http://www.vaccineinformation.org

Military Vaccine (MILVAX) Agency http://www.vaccine.mil