



Herpes Zoster

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Definition

- A. Herpes zoster is an acute viral skin infection that results from reactivation of the varicella-zoster virus (VZV) in sensory dorsal root ganglia.
- B. Herpes zoster is characterized by unilateral vesicular eruption and neurologic pain in a dermatomal pattern (see Figure 1).
- C. The condition commonly is referred to as “shingles” or “zoster.”

Incidence

- A. Six hundred thousand to one million cases appear each year in the United States.
- B. Incidence rates increase with advancing age and double in each decade past 50 years.
- C. The condition is uncommon in individuals under 15 years of age.
- D. The condition is less common in African Americans, indicating a possible racial difference in susceptibility to VZV reactivation.
- E. Current evidence suggests the possibility of decreased reactivation of VZV following varicella vaccination.

Risk Factors

- A. Factors that decrease cell-mediated immunity increase the risk of herpes zoster.
- B. Age and disease-related factors
 1. Age (older than 50)
 2. Malignancies (especially lymphoproliferative disorders such as non-Hodgkin's lymphoma)
 3. HIV/AIDS
- C. Treatment-related factors
 1. Organ or allogeneic bone marrow

- transplants (occurring secondary to immunosuppressive medications)
2. Systemic corticosteroid use
3. Chemotherapy
4. Radiation therapy

Pathophysiology

- A. After initial infection with varicella (i.e., chicken pox), VZV is not eliminated from the body. Instead, VZV remains dormant in the sensory dorsal root ganglia.
- B. Cell-mediated immunity maintains dormancy.
- C. Decreased cell-mediated immunity may cause reactivation of the dormant virus, resulting in herpes zoster.
- D. Reactivated virus then follows the sensory nerve pathway, causing pain and skin lesions in the area innervated by the sensory nerve (dermatome).
- E. Transmission of VZV is possible to those without immunity (i.e., no prior history of primary varicella infection or varicella vaccination).
 1. Active virus is present in vesicles.
 2. Herpes zoster is less contagious than chicken pox.
 - a) Approximately 15% household infection rate is reported.
 - b) Transmission causes chicken pox in those infected.

Signs and Symptoms

- A. Prodromal symptoms usually precede eruption of lesions by one to five days, occasionally by as much as three weeks.
 1. Fever
 2. Malaise
 3. Headache

4. Pruritis
5. Pain is the most common symptom and is manifested as:
 - a) Burning or lancinating dyesthesia
 - b) Paresthesias
 - c) Hyperesthesia (increased sensitivity to stimuli such as touch and temperature)
 - d) Occasionally, the characteristic rash does not develop after prodromal symptoms. This syndrome is known as zoster *sine herpete*.

- B. Rash
 1. Initially, a maculopapular rash that follows a dermatomal, or belt-like, distribution appears.
 2. This rash progresses to clusters of clear vesicles or bullae on an erythematous base.
 - a) Lesions usually are unilateral.
 - b) They rarely cross the midline.
 - c) Lesions can occur in scattered patches or a continuous band.
 - d) New vesicles continue to erupt for two to three days.
 3. Lesions become pustular, occasionally hemorrhagic, and crust over within 7–14 days.
 4. No active virus is present in crusted lesions.
 5. Total resolution of rash occurs in three to four weeks.
 6. Residual areas of hyperpigmentation, hypopigmentation, or scarring may occur.

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