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Recombinant Zoster Vaccine (Shingrix) to Prevent Herpes Zoster

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ABSTRACT: Women ages 50 years and older are at risk for herpes zoster, a reactivated virus from varicella zoster virus (chickenpox) that causes a painful vesicular rash and can result in postherpetic neuralgia. It is estimated that one in three adults will be affected by herpes zoster in their lifetime. Research evidence points to the need to prevent herpes zoster through vaccination. Since 2006, clinicians have been vaccinating adults with zoster vaccine live (brand name Zostavax), but the efficacy of this vaccine wanes with time and advanced age. In October 2017, the U.S. Food and Drug Administration approved recombinant zoster vaccine under the brand name Shingrix to prevent herpes zoster. Studies have shown significantly better efficacy of Shingrix versus Zostavax. This article summarizes new guidance regarding vaccination with Shingrix and discusses implications for women's health.

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KEYWORDS: chickenpox, herpes zoster, immunization, recombinant zoster vaccine, shingles, Shingrix, vaccination, varicella zoster virus, Zostavax

The herpes zoster (HZ) viral infection, often called shingles, is a secondary infection caused by the reactivation of the varicella zoster virus (VZV). VZV, or chickenpox, is the same herpes virus but is a primary illness usually seen in childhood (Centers for Disease Control and Prevention [CDC], 2016). After the primary infection, the virus migrates from the skin lesions to the dorsal root ganglia, where it lies dormant until reactivation. The pathogenesis of this very contagious virus is primarily from person-to-person direct contact with individuals who have VZV or HZ. This can Q1 include airborne droplet spread, contact with the conjunctiva or nasal/oral mucosa, and direct contact with the vesicular

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CLINICAL IMPLICATIONS

- The herpes zoster viral infection, often called shingles, is a secondary infection caused by the reactivation of the varicella zoster virus.
- More than 99% of U.S. adults ages 40 years and older have documented serologic evidence of past varicella zoster virus infection, and approximately one in three adults will develop herpes zoster during their lifetime.
- Herpes zoster infection can lead to varicella zoster virus infection among individuals who are seronegative; this is particularly important for seronegative pregnant women.
- The most common complication of herpes zoster is postherpetic neuralgia, which can cause pain lasting from a few weeks to a few months or years.
- Nurses are well positioned to help women make informed decisions regarding vaccination to prevent herpes zoster.

zoster lesions (Cash & Glass, 2017). VZV infection can have significant health consequences, including bacterial skin infections, bacterial pneumonia, encephalitis, cerebellar ataxia, sepsis, and hemorrhagic conditions in some individuals (CDC, 2016).

More than 99% of U.S. adults ages 40 years and older have documented serologic evidence of past VZV infection, and approximately one in three adults will develop HZ during their lifetime (CDC, 2018b). With a transmission rate of approximately 15%, infection with HZ can lead to VZV among individuals who are seronegative (Schmid & Jumaan, 2010). This is particularly important for seronegative pregnant women, who, if they develop VZV up to 5 days before or up to 2 days after childbirth, are at extremely high risk (Cash & Glass, 2017). Infants born to these women are at risk for acquiring neonatal varicella, which has a 30% mortality rate (CDC, 2016). A vaccine with strong efficacy to prevent HZ and its possible transmission to pregnant seronegative women could help reduce this risk.

> Women ages 50 years and older are at risk for herpes zoster, which causes a painful vesicular rash and can result in postherpetic neuralgia

In 2006, the U.S. Food and Drug Administration (FDA) approved the use of HZ live-attenuated vaccine under the brand name Zostavax (Merck, White House Station, NJ) for

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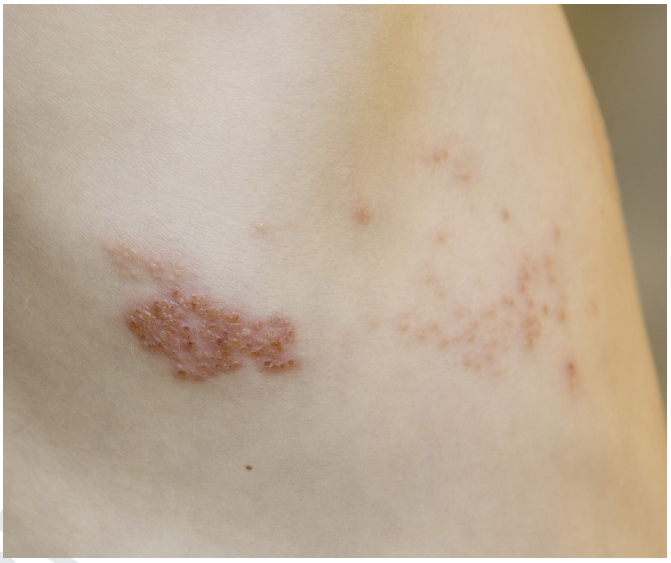

adults ages 50 years and older, and the Advisory Committee on Immunization Practices (ACIP) recommended its use (Hales, Harpaz, Ortega-Sanchez, & Bialek, 2014). However, in October 2017, the FDA approved the use of recombinant zoster vaccine (RZV) under the brand name Shingrix (GlaxoSmithKline, Brentford, UK) for the prevention of HZ in adults ages 50 years and older (GlaxoSmithKline, 2017).

VZV immunity declines with age, leading to increased incidence of HZ infection, with a significant rise to 50% in individuals 80 years and older. The most common complication of HZ is postherpetic neuralgia, which can cause pain lasting from a few weeks to a few months or years, potentially resulting in decreased quality of life. This makes the disease a challenge to treat (Johnson & Rice, 2014). Unlike Zostavax, Shingrix's efficacy does not decrease with age (Cohen, 2015). In this article, we summarize the guidance on vaccination with Shingrix and discuss recommendations for its use.

Background/Overview

HZ is a potentially serious disease that affects 1 million people per year in the United States, with the incidence rising as adults age. It is more prevalent among those older than 80 years versus among those ages 50 to 59 years (Dooling et al., 2018). When HZ is reactivated, the dorsal root ganglia are stimulated, producing a painful unilateral dermatomal vesicular rash that can result in postherpetic neuralgia. The virus can affect individuals across all age groups, but it more frequently affects those with advanced age because of the subtle and progressive weakening of the immune system associated with aging. Risk is greater for persons with impaired CD4 T-cell–mediated immunity such as that experienced with HIV infection and certain malignancies, chronic corticosteroid use, and chemotherapy and radiation therapy (Johnson & Rice, 2014).

The onset of the disease is characterized by itching, burning, tingling, or painful sensation at lesion sites. During

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