Reactivation of varicella-zoster virus (VZV), also known as shingles, is a common health concern among patients aged 50 years or older and those with compromised immunity (Stankus, Dlugopolksi, & Packer, 2000; Yawn et al., 2007) (see Figure 1). Reactivation of VZV is caused primarily by diminished cellular-mediated immunity from age-related immunosenescence, infections, and immunosuppressive agents (Burke et al., 1982; Yawn et al.). Disseminated VZV prevalence is relatively low, but VZV has been reported in patients following solid organ and stem cell transplantation and in patients receiving chemotherapy (Carby, Jones, Burke, Hall, & Banner, 2007; Curley, Hussein, & Hassoun, 2002; Doki, Hoshino, Iriyama, Sakura, & Miyawaki, 2004; Manuel, Kumar, Singer, Cobos, & Humar, 2008; Rodriguez-Moreno et al., 2006). Patients with lymphoproliferative disorders (e.g., chronic lymphocytic leukemia, Hodgkin disease, or non-Hodgkin lymphoma) have a higher risk for disseminated VZV after stem cell transplantation (Kim et al., 2008). However, disseminated VZV has not been reported in patients with myelodysplastic syndrome following treatment with azacitidine (Vidaza®, Celgene Corporation) or in preapproval clinical trials (Celgene Corporation, personal communication, June 22, 2006).

Overview

VZV is related closely to herpessviruses (Centers for Disease Control and Prevention [CDC], 2007; Harper, Gilbert, & Jeffries, 1998). VZV infection causes two clinically distinct conditions. Primary infection with VZV results in varicella or chickenpox, which largely affects children with a mild, self-limiting course (Wharton, 1996). After clinical resolution of primary infection, viral latent infection is established when VZV retrogrades into the sensory dorsal roots of ganglia (Breuer & Whitley, 2007). Vaccination in children to prevent primary VZV has reduced chickenpox cases in the United States (Marin, Güris, Chaves, Sanchez, & Seward, 2008). Age is the most important risk factor, with risk increasing greatly after age 50; about 50% of people who live to age 85 will develop an episode of herpes zoster infection (Harpaz et al.). Women have a slightly higher risk than men, and African Americans have a lower incidence of herpes zoster (Opstelten, Van Essen, Schellevis, Verheij, & Moons, 2006).

Incidence and Risk Factors

About one in three Americans will develop zoster during their lifetime, and an estimated one million cases of herpes zoster infections occur in the United States annually (CDC, 2007; Harpaz, Ortega...

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