Boosting Immunity to Herpes Zoster

Each of us with the misfortune of having contracted chickenpox in childhood face a future of uncertainty. Will our immune systems remain vigilant enough to prevent a painful and debilitating episode of shingles? And if not, will a protracted postherpetic neuralgia (PHN) await us? This supplement to JAOA—The Journal of the American Osteopathic Association includes a comprehensive review of herpes zoster. It comprises six articles that will provide physicians with a practical understanding of the pathophysiology, diagnosis, management, and prevention of herpes zoster and PHN, including the use of the zoster vaccine found to decrease the burden of illness due to herpes zoster by 61.1% and reduce the incidence of PHN by 66.5% in individuals aged 60 years or older.1

The contents of this issue were developed from a roundtable discussion conducted October 29, 2009, during the American Osteopathic Association’s 113th Annual Convention and Scientific Seminar in Las Vegas, Nev. This program brought together a panel of experts representing both the osteopathic and allopathic medical professions to enlighten primary care physicians about herpes zoster and underscore the efficacy and safety of the varicella vaccine live in preventing shingles and its most painful sequela, PHN. A video of the discussion is posted at http://www.docmeonline.com under the “Featured CME” tab.

The discussion in this supplement begins with an overview of the natural history and incidence of herpes zoster by Bethany A. Weaver, DO, MPH. Dr Weaver provides a brief summary of childhood chickenpox, indications of immunity, and current immunization recommendations followed by a look at the epidemiology, clinical manifestations, diagnosis, and complications of herpes zoster.

Next, Katherine E. Galluzzi, DO, CMD, reviews the antiviral agents—acyclovir, valacyclovir, and famciclovir—and corticosteroids for managing herpes zoster. She also surveys the pharmacologic options for alleviating PHN (ie, tricyclic antidepressants, anticonvulsants, opioids, and topical agents).

From Michael N. Oxman, MD, an infectious disease specialist at the San Diego VA Healthcare System and the University of California, San Diego, and leader of the Shingles Prevention Study,1 comes a concise review of the pathogenesis and immune response to herpes zoster. By providing a comparison of herpes-zoster virus and herpes simplex virus infections, Dr Oxman elucidates the mechanisms behind the clinical course and complications of zoster and PHN. He also discusses the cell-mediated response to infection.

From the Ohio University College of Osteopathic Medicine in Athens, where Dr Clay serves as Associate Professor of Geriatrics and Dr Carlsen is Department Chair—Geriatric Medicine/Gerontology. Dr Clay reports that he has been on the speakers bureau for Pfizer, Inc, and Reckitt Benckiser Pharmaceuticals, Inc. Dr Carlsen reports that he has no relevant financial relationships to disclose.

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In the fourth article, Lawrence D. Gelb, MD, also a member of the Shingles Prevention Study Group, reviews the results of the Shingles Prevention Study and outlines the effectiveness of vaccination with the live zoster virus in reducing the incidence and severity of shingles as well as general recommendations and contraindications of zoster vaccination among patients aged 60 years or older.

Next, Francis A. Komara, DO, emphasizes the beneficial importance of herpes zoster vaccination and cites the difficulties that make uptake by the targeted population suboptimal. He reviews the administration of the zoster vaccine to adults and the elderly as well as reimbursement and availability issues.

In concluding this roundtable, Kevin P. High, MD, discusses lessons learned in the administration of the influenza and pneumococcal vaccines. He also cites specific barriers to utilization of the zoster vaccine live, its efficacy, and its co-administration with other vaccines.

In total, then, the roundtable participating authors and discussants could be considered in unison with a summary statement (Figure) that derives from their presentations and discussion.

Reference

An estimated 1 million new cases of herpes zoster occur yearly in the United States. Herpes zoster is caused by reactivation of the varicella-zoster virus (VZV), which establishes latency in the dorsal root ganglia during chickenpox, the clinical manifestation of primary VZV infection.

Herpes zoster can be divided into three phases: a prodromal phase, consisting primarily of unilateral pain; an acute phase, during which the dermatomal rash develops; and a postherpetic phase, when the rash has resolved. This final phase may be complicated by persisting pain and allodynia, a debilitating condition known as postherpetic neuralgia (PHN).

The incidence and severity of herpes zoster increase with advancing age, as does its most common complication, PHN, which is defined as a long-lasting zoster-associated pain. The increased risk of herpes zoster and PHN with advancing age is most likely due to an age-related decline in cell-mediated immunity to VZV. Postherpetic neuralgia can be debilitating, especially in older adults.

Antiviral agents are the most widely used treatment for patients with herpes zoster. They accelerate healing in the acute phase of herpes zoster and reduce the duration of zoster-associated pain. However, antiviral agents do not reliably prevent PHN, likely because most of the neural damage that leads to PHN occurs before the rash appears (ie, before it is possible to diagnose and treat patients with herpes zoster). Treatment for patients with PHN includes tricyclic antidepressants, anticonvulsants, and topical anesthetics. However, management of this complication is difficult. Thus, the most effective strategy for the management of herpes zoster and PHN is prevention of the disease through vaccination. Indeed, the Shingles Prevention Study demonstrated that zoster vaccine significantly reduced the incidence and severity of herpes zoster as well as the incidence of PHN.

The main barrier to herpes zoster immunization is that physicians do not strongly recommend it to patients. Other barriers to immunization exist that must be overcome, such as reimbursement for the vaccine, storage of the vaccine, and availability of the vaccine. Educating physicians and the community of the advantages of preventing herpes zoster while underscoreing the pain associated with the disease and the challenges in managing it will help to overcome these barriers.

Figure. Summary Statement from expert panel discussion on herpes zoster.