Managing the challenge of herpes zoster in the long-term care setting

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In the United States, the number of older adults requiring long-term care services is projected to more than double from 10 million in 2000 to 21 million in 2040.¹ The long-term care environment predisposes patients to infectious outbreaks and subsequent complications.² Herpes zoster, commonly known as shingles, is a highly contagious infection of varicella-zoster virus (VZV), which is transmitted from person to person by direct contact with, or aerosolization from, skin lesions or respiratory tract secretions.³ The risk of herpes zoster is closely related to the decline of VZV cell-mediated immune response with aging and immunosuppression. Research indicates that if an individual older than age 60 years had VZV-caused chickenpox as a child, he or she has a 50% chance of getting shingles by the age of 85 years.⁴ Because herpes zoster is highly contagious, early detection and diagnosis are imperative to limit the spread of the disease to other residents, healthcare workers, and visitors in nursing homes and other long-term care facilities.²,⁴

Presentation in elderly adults

Early diagnosis and treatment can shorten the duration of shingles and also prevent complications, such as the chronic pain of postherpetic neuralgia (PHN) and secondary infections, which can occur long after the shingles lesions have vanished. However, diagnosis can be challenging because the initial symptoms of herpes zoster are ambiguous in many cases, causing the disease to be mistaken for other ailments—particularly in the elderly population. Some patients become quite ill with the flu-like symptoms of fever, chills, nausea and headache. A rash develops soon after these vague symptoms, along with tingling and/or a painful feeling of being poked by pins. Symptoms in elderly patients can be so painful or illusive in their presentation that such conditions as appendicitis, earaches, gallstones, kidney stones, myocardial infarction or pleurisy may be suggested.⁵⁻⁷ A physician may not be able to conclusively determine shingles to be the source of the symptoms until the appearance of characteristic lesions 48 to 72 hours after the onset of pain.³ Diagnosis can be even more illusive in those patients who have dementia or multiple comorbidities or who are taking medications with adverse effects similar to herpes zoster symptoms.

Postherpetic neuralgia can have an overwhelming impact on quality of life and level of daily functioning for the elderly individual. Chronic fatigue, severe depression, thoughts of suicide, sleeplessness or disordered sleep, anxiety, difficulty concentrating, anorexia and weight loss are commonly associated with PHN.⁵ In addition, the excruciating pain that occurs with PHN has been known to cause drastic personality changes in patients. These personality changes may be misdiagnosed as mental decline, acute infections, adverse effects of medications, or other conditions.⁵,⁸

The increased level of patient assistance needed from caregivers—and the consequent restriction of caregivers’ social activities—can cause great stress and anxiety among the long-term care facility employees.³ The fact that many of the healthcare workers in the long-term care setting are too young to have personally experienced shingles increases the challenge for these employees in understanding the level of suffering experienced by their patients.

Treatment implications

When herpes zoster occurs in the elderly population, pharmacotherapeutic approaches to management must be modified and nonpharmacotherapeutic approaches must be augmented to decrease the duration and
The skin should be kept clean, and supplements containing the amino acid arginine, which is required for VZV to replicate. Such foods include almonds, cashews, cereal grains, chocolate, coconut, dairy products, oats, peanuts and soybeans.

y Avoid foods rich in arginine, which is necessary for VZV replication.

y Consume foods rich in the amino acid lysine. Studies indicate that the process of VZV replication extracts lysine—which has a similar chemical structure to arginine—from the bloodstream. The virus attempts to use lysine as it would use arginine—to make protein VII, an arginine-rich protein component of the viral core. However, this attempt fails. Thus, lysine acts like an arginine substitute, "fooling" the virus and preventing it from replicating and causing outbreaks. Foods that contain high levels of lysine include most vegetables, including legumes, as well as fish, chicken and turkey.

y Use supplements containing the vitamin B12/B6 complex, which aids the body in recovery and reduces the pain associated with shingles.

y Apply capsaicin cream, which aids in relieving pain associated with shingles.

y Avoid foods that encourage an overly acidic body system, such as chocolate, fried foods and red meat, and do not drink caffeine-containing or carbonated beverages (not even "fizzy” water).

y Because sugar suppresses the activity of white blood cells, refined sugar products—including cakes, cookies, sweet baked goods and sodas—should not be reused.

y Nondisposable items such as towels, combs and clothing should be washed in boiling water or otherwise disinfected before reuse.

The oral or intravenous antiviral agents acyclovir, famciclovir and valacyclovir have been proven to accelerate healing and to decrease symptoms in older patients if given within 72 hours of the onset of the herpes zoster rash. The efficacy of these three agents seems to be equivalent. Antihistamines, taken by mouth or applied to the skin, are frequently used to reduce the itching associated with shingles. However, both of these drug classes can produce adverse effects—especially in elderly individuals. Thus, precautions should be taken to reduce these risks.

The use of steroid therapy to prevent the development of PHN is controversial. Several studies suggest that prompt steroid therapy upon recognition of VZV infection may prevent long-term complications and pain associated with acute infection. However, other studies indicate that risks of steroid therapy, such as acute psychosis, bone loss and elevated blood glucose, may outweigh its benefits.

The National Guideline Clearinghouse’s recommendations for management of herpes zoster warn that vulnerable and frail elderly individuals need to be monitored closely in the long-term care setting to detect inadequate responses to therapy. For example, both pharmacotherapeutic and nonpharmacotherapeutic approaches require scrupulous monitoring in individuals with dementia. Herpes zoster-related pain and acute inflammation may lead to worsening cognition in these individuals, and pain management in these individuals is complicated because of the risk for adverse cognitive effects of opioid analgesics, gabapentin, pregabalin and tricyclic antidepressants. The use of steroid therapy to prevent the development of PHN is controversial. Several studies suggest that prompt steroid therapy upon recognition of VZV infection may prevent long-term complications and pain associated with acute infection. However, other studies indicate that risks of steroid therapy, such as acute psychosis, bone loss and elevated blood glucose, may outweigh its benefits.

The following list includes some basic hygiene and dietary recommendations and herbal remedies that can be useful in treating elderly patients with herpes zoster in the long-term care setting, especially when attempting to limit the use of pharmacologic agents.
be avoided. Naturally occurring sugars, such as those in fruit, should be eaten in moderation.

In addition to using hygiene and dietary approaches and herbal remedies to treat elderly patients with herpes zoster, consideration should be given to using osteopathic manipulative treatment, including lymphatic pump techniques, myofascial release—which can aid in proper breathing and cardiac output—and lymphatic drainage—which can aid in healing. In addition, aromatherapy, biofeedback and other stress/pain reduction approaches may be useful for increasing patient comfort and sense of well-being.

To reduce the risk of cross-infectivity in nursing homes and other long-term care settings, the federal Centers for Disease Control and Prevention (CDC) recommends that individuals with herpes zoster be given private rooms to protect other patients and susceptible staff members.

For immune-incompetent patients, negative pressure ventilation and other strict precautions are required to prevent secondary infections. If a nursing home or other long-term care facility is not equipped to provide these recommended services, a hospital setting may be more suitable for those individuals requiring such treatment.

**Prevention of VZV transmission**

Prompt recognition and initiation of antiviral treatment for patients with herpes zoster can prevent the spread of VZV to susceptible individuals in the long-term care setting. Prevention of VZV transmission in the long-term care setting includes isolation of patients with herpes zoster from immunocompromised individuals until all lesions have crusted over.

Isolation is important not only to protect fellow residents of long-term care facilities, but also to protect facility healthcare providers. This is especially important considering that many women of childbearing age work in the long-term care setting. Pneumonia is a common complication of VZV infection in pregnant women. Death rates in untreated varicella pneumonia in pregnant women are as high as 45%.

**Herpes zoster vaccination**

The vaccine for herpes zoster is crucial in the long-term care setting. Elderly patients with chronic illness are at high risk of infection and complications as a result of advanced age and age-related reduction in cell-mediated immunity, as previously described.

Recommendations of the Advisory Committee on Immunization Practices, released in May 2008, state the following: “Zoster vaccine is recommended for all persons aged >60 years who have no contraindications, including persons who report a previous episode of zoster or who have chronic medical conditions. The vaccine should be offered at the patient’s first clinical encounter with his or her healthcare provider. ... Zoster vaccination is not indicated to treat acute zoster, to prevent persons with acute zoster from developing PHN, or to treat ongoing PHN.”

According to a recent survey published in *Geriatrics,* however, the number of physicians who are familiar with the unique needs of patients in the long-term care setting is declining. This “provider gap” plays a major role in patient care. In the *Geriatrics* survey, the following text describes the prescription of the herpes zoster vaccine by medical directors of long-term care facilities.

Medical directors reported ordering the vaccine either never or rarely [for younger patients], with a frequency that increased with age—65% [of medical directors ordered the vaccine] for those [patients] aged 60 to 69 years and 83% [of medical directors ordered the vaccine] for those [patients] aged 90 or older. A small percentage (3% to 5%) of medical directors indicated that they always administer the vaccine, and slightly higher percentages reported that they administer it usually or occasionally in all age cohorts.

Cost ratios have played a major role in use of the herpes zoster vaccine, as evidenced by the following quote from Hornberger and Robertus: “Vaccination would be more cost-effective in ‘younger’ older adults (age 60 to 64 years) than in ‘older’ older adults (age >80 years).”

Longer life expectancy and a higher level of vaccine efficacy offset a lower risk for herpes zoster in the younger group. Other factors influencing cost-effectiveness include quality-of-life adjustments for acute zoster, unit cost of the vaccine, risk for herpes zoster, and duration of vaccine efficacy.

Group or herd statistics suggest that nursing home administrators could play a greater role in reducing VZV transmission rates if more patients—especially younger patients—were given the herpes zoster vaccine. However, most nursing home administrators base their disease-prevention and cost-reduction decisions on statistics from their own patient community, rather than on published herd statistics.

**Education and awareness**

Preserving the dignity and comfort of patients in the expanding US elderly population is of growing importance. Public in-
formation campaigns on the issue of herpes zoster in elderly individuals and increased availability of information and resources for physicians and other healthcare workers have resulted in improved understanding of this disease.

In early 2009, the Visiting Nurse Associations of America, the National Pain Foundation and the National Council on Aging announced the launch of AfterShingles.com (www.aftershingles.com/), an online resource to help consumers learn about shingles and PHN.16 The goal of this Web site, which was originally launched in 2001, is to help facilitate discussion between patients and their physicians.

In the long-term care setting, AfterShingles.com is an excellent tool for healthcare workers—including licensed practical nurses, licensed vocational nurses, and certified nursing assistants—to increase their awareness of the signs and symptoms of herpes zoster. These healthcare workers can make a huge difference in patient outcomes if herpes zoster is detected in its earlier stages.

Spotlight on Shingles (www.spotlightonshingles.com/) is another educational campaign about herpes zoster, sponsored by the American Pain Foundation. This program seeks to raise awareness and understanding among older people, healthcare professionals and personal caregivers about shingles and its potential complications. Yet another online resource—the CDC’s Immunization Toolkit (www2.cdc.gov/nip/isd/immtoolkit/default.htm) —offers information for healthcare personnel who provide immunization services.

Final notes
The osteopathic approach of considering a patient’s mind, body and spirit in treatment can provide a unique perspective on treating elderly individuals with herpes zoster in the long-term care setting. By combining this approach with future research results on optimizing implementation of the herpes zoster vaccine and preventing complications of VZV infection, the osteopathic medical community will be better able to prevent the spread of herpes zoster and to treat those patients afflicted with the disease. www

References


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