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A Resource for Interprofessional Providers

Herpes Zoster ("Shingles") and Postherpetic Neuralgia

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Herpes zoster, commonly known as "shingles," is caused by the varicella zoster virus (VZV). It occurs in about 1 million individuals each year in the US. Age is a major risk factor for herpes zoster with reactivation occurring due to waning cell-mediated immunity over time; over half of unvaccinated patients 85 years and older are affected.

Clinical Presentation & Diagnosis

VZV is usually acquired during childhood as chickenpox. After the initial VZV infection, viral particles travel to cranial and dorsal root ganglia where they are shielded from antibodies, and lie dormant. Under conditions of decreased cell-mediated immunity, which occur with aging, acute illness, autoimmunity and medication-induce immune impairment, the virus reactivates and replicates, resulting in herpes zoster.

Zoster begins with a prodrome of malaise, headache, fever, and burning pain. The classic rash follows in two to three days. The rash starts as maculopapular lesions that appear in a single, unilateral dermatome (see figure below). The rash progresses to vesicles that crust over after seven to ten days. Herpes zoster is typically a clinical diagnosis, but polymerase chain reaction testing of vesicle fluid can be used with atypical presentations (95% sensitivity; 100% specificity).

The most common complication of zoster is post herpetic neuralgia (PHN), a syndrome of pain in a dermatomal distribution sustained for at least 90 days after the rash. While rare in young adults, PHN occurs in an estimated 10-13% of patients with herpes zoster age 50 years and older. PHN in older adults can last for years, causing severe and disabling pain. On rare occasions, shingles can cause blindness or hearing loss, and patients may develop pneumonia or encephalitis, which can be fatal.

Management of Acute Herpes Zoster

Ideally, treatment should be initiated within 72 hours of presentation to maximize treatment benefits. Antiviral oral guanosine analogues are the mainstay of treatment, with additional medications serving as adjuncts (Table 1). If new lesions develop, ophthalmic or neurologic complications are present, or the patient is immunocompromised, treatment outside the 72-hour window is warranted. Antivirals decrease pain severity, promote healing of active lesions, and prevent the appearance of new lesions, but current data is conflicting whether a reduction in the incidence of PHN is seen with antiviral therapy.


Shingles
A.D.A.M.

Data shows that glucocorticoids, in combination with antivirals, reduce acute pain but do not change healing and do not reduce the incidence of PHN. Medications selected for pain control depends on pain severity. Treatments typically used include acetaminophen, non-steroidal anti-inflammatory drugs, steroids, anticonvulsants, tricyclic antidepressants, and/or nerve blocks.

Management of Postherpetic Neuralgia

Treatment options for PHN include both topical and systemic treatments. These are shown in Table 2.

For milder symptoms, capsaicin cream and lidocaine patches have shown improvement in pain, although evidence supporting their effectiveness is inconsistent. Capsaicin 0.075% cream has limited but significant evidence for pain control. Capsaicin 8% patches, on the other hand, have shown clear evidence of benefit when improvement was previously seen with the lower dose, but they are associated with skin irritation and pain with application.

For moderate-severe symptoms or those not improved with topical medication, approved systemic treatments for PHN include anticonvulsants (gabapentin and pregabalin), which can achieve up to a 50% reduction in pain (NNT=8 and NNT=4, respectively). Titration to an effective dose can take days to weeks, and adverse effects such as somnolence, may limit their use in older adults. Amitriptyline is sometimes used in younger individuals and those with comorbid depression but should be used with caution in older adults due to anticholinergic effects.

Prevention

Zoster and PHN can be prevented by vaccines, but vaccination rates in older adults are as low as 24% in some studies.

The recombinant vaccine (RZV-Shingrix) is available and recommended by the Centers for Disease Control and Prevention (Table 3). Previously Zostavax (VZL) was an available option but is less effective than RZV and has been discontinued in the US. Patients previously vaccinated with VZL should be revaccinated with the RZV vaccine.. RZV is 96%, 97%, and 91% effective in adults aged 50-59, 60-69, and >70 years, respectively, and protection lasts 7-9 years. RZV should be given to all patients 50 year and older, including those with a past history of herpes zoster and those with a current acute episode, though in the latter group, vaccination should be delayed until the acute phase of illness is complete. The vaccine is also recommended for those with chronic conditions such as diabetes mellitus, rheumatoid arthritis, chronic kidney disease, and chronic obstructive pulmonary disease. RZV has recently been approved for immunocompromised patients 19 years and older regardless of history of shingles.

TIPS ABOUT THE MANAGEMENT AND PREVENTION OF HERPES ZOSTER AND POSTHERPETIC NEURALGIA

- Acute herpes zoster ("shingles") is a clinical diagnosis with best outcomes occurring when treatment is started within 72 hours using oral antiviral agents in combination with systemic glucocorticoids to decrease pain and shorten healing time.
- Shingrix (RZV) vaccine is the first-choice vaccine for preventing herpes zoster and PHN in adults age >50 and immunocompromised adults >19.
- Vaccination with RZV in patients who have been previously vaccinated with VZL is recommended.

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Continued from front page

An important aspect of prevention is avoiding spread of infection. Although shingles cannot be spread from one person to another, direct contact with fluid from the blisters in the zoster rash can transmit virus and cause chickenpox in individuals who have never had chickenpox or received the varicella vaccine.

Antiviral therapy can also reduce viral load and thus spread of varicella. This is of particular concern for older adults who are interacting with unvaccinated grandchildren. Once the rash has crusted over, however, it is no longer infectious.

Table 1: Treatments for Acute Herpes Zoster *

Agent	Dosage	Side Effects	Comments
Acyclovir	800mg PO 5x per day (7 days)	Diarrhea, headache, malaise	Monitor INR in patients taking warfarin
Famciclovir	500mg PO 3x per day (7 days)	Confusion, headache, nausea	Dose adjustment for CrCl <50ml/min
Valacyclovir	1,000mg PO 3x daily (7 days)	Diarrhea, headache, malaise,	Dose adjustment for CrCl <50ml/min
Prednisolone	3 of varicella 0mg PO daily (21-day taper)	Dyspepsia, nausea, vomiting	Used for pain control. Does not prevent post-herpetic neuralgia or decrease time of acute infection.
Acetaminophen (Tylenol)	325 q4-6 hours PRN; maximum dose in older adults is 3,000 mg/day	Headache, hepatotoxicity	Used for pain control. Use lower doses in liver disease
Ibuprofen	400mg PO q4hrs PRN	Abdominal discomfort, dyspepsia, GI bleeding	Used for pain control. Avoid in history of renal disease

* None of these medications prevents or reduces the occurrence of post herpetic neuralgia

Table 2: Treatments for Postherpetic Neuralgia

Agent	Dosage	Side Effects	Comments
Lidocaine 5% patch	Up to 3 patches daily	Blisters, local erythema, rash	For mild symptoms. Do not use on broken skin
Capsaicin 0.075%	Four applications per day	Erythema, pain, rash	For mild symptoms. Avoid contact with eyes and mucous membranes
Capsaicin 8% patch	Up to 4 patches for up to 60 minutes Do not apply more often than q3 months	Erythema, pain, rash	For mild symptoms. Pre-treat area with topical anesthetic prior to applying patch
Gabapentin	300 to 600mg PO 3 times per day	Dizziness, peripheral edema, sedation, weight gain	For moderate-severe symptoms. When discontinuing, taper over 7 days (or longer w/high doses); adjust dose for CrCl <60ml/min
Pregabalin	150 to 300mg PO per day in 2 or 3 divided doses	Dizziness, peripheral edema, sedation, weight gain	For moderate-severe symptoms. Taper when discontinuing. Dose adjustment for CrCl <60ml/min
Amitriptyline	10-25mg PO at bedtime, increase 10 mg per week with goal of 75-150 mg/day	Constipation, blurred vision, dry mouth, sedation, urinary retention	Used if not improving with other therapies. Not recommended for older adults due to anticholinergic effects

Table 3: Zoster Vaccines

Vaccine	Age	Dose/Route	Effectiveness	Comments
Shingrix (recombinant zoster vaccine/ RZV)	50	2 doses (0 months and 2-6months) Intramuscular	96.6% efficacy (50-59) 97.4% (60-69) 91.3% (>70)	This is the CDC-recommended vaccine Store in refrigerator Adverse events: Injection site redness, pain, swelling
Shingrix (RZV)	19	2 doses (0 months and 1-6months) Intramuscular	68-91% effective (dependent on immune status)	CDC-recommended vaccine Store in refrigerator Adverse events: Injection site redness, pain, swelling

Vaccine completion significantly prevents and reduces occurrence of acute herpes zoster and post-herpetic neuralgia

Zostavax (zoster vaccine live) is no longer available in the United States (2021).

References and Resources

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Center for Disease Control: https://www.cdc.gov/shingles/about/index.html provides useful clinical information

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