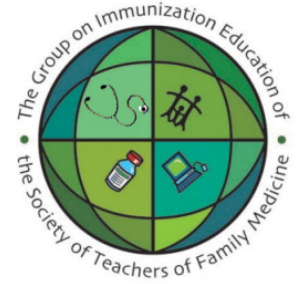


Group on Immunization Education
Society of Teachers of Family Medicine



CLINICAL SCENARIO SERIES ON IMMUNIZATION

Shingles and Post Herpetic Neuralgia

Written by:

Donald B. Middleton, MD
Department of Family Medicine
University of Pittsburgh

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Clinical Scenario – Shingles and Post-Herpetic Neuralgia

Learning Objectives

1. Learn the natural history of herpes zoster virus and its severe consequences for older adults.
2. Recite the clinical complications of an attack of herpes zoster (shingles)
3. Incorporate herpes zoster (shingles) vaccine into clinical practice as an effective health preventive measurement for an older adult.

Scenario

Visit 1

After shoveling snow 2 days ago, Ramon, a 68 year-old married financial consultant, presents with severe burning pain (9 of 10) radiating from his back around his chest to his upper abdomen. The pain is relentless, unresponsive to ibuprofen, 600 mg, TID, and local heat; is constantly distracting; and interferes with simple tasks like dressing or sleeping. He is unable to work.

Past health issues include osteoarthritis compressing the mid-thoracic disks responsive to physical therapy and ibuprofen, prn. He also has diet- and metformin (1000 mg, BID)-controlled diabetes mellitus (last A1c was 6.8%); hypertension controlled with HCTZ, 25 mg, daily; and hypercholesterolemia (LDL=98, HDL=41) controlled with simvastatin, 40 mg, daily.

He does not smoke or drink to excess. He exercises twice a week, gets annual influenza vaccination, and had a pneumococcal polysaccharide vaccine (PPV) at age 66 years.

He has two children and three grandchildren. His father died at age 58 from a heart attack. His mother is 87 and still fit.

His wife, Louisa, age 61 years, is concerned about whether his pain could be from his heart or his back arthritis.

His physical examination is unremarkable except for pain with movement or palpation of the right back. Cardiac evaluation is normal with a BP of 140/88 (higher than usual due to pain). EKG is normal.



Clinical Scenario – Shingles and Post-Herpetic Neuralgia

After prescribing acetaminophen, 1000 mg, QID coupled with use of oxycodone, 15 mg, TID, prn but especially for sleep, you advise Ramon to return immediately if he develops a rash or worsening symptoms.

Visit 2

36 hours later, Ramon comes with a rash around his midback to his flank. The rash is vesicular and seemed to develop quickly over the past 24 hours. The pain persists (8 to 10 of 10) with only moderate relief from the oxycodone/acetaminophen.

Two weeks ago Ramon and Louisa had visited their 15 month-old granddaughter, Concha, in Mexico. Concha developed chickenpox while they were visiting. Ramon states that he never had chickenpox. Louisa is concerned that Ramon has shingles and wants to keep herself safe as well as treat his discomfort.

On examination he has over 200 2-4 mm vesicles on red bases scattered from his back around to his upper abdomen. Any touch is intolerable.



Zoster in a Thoracic Dermatome

Shingles vesicles

Source: <http://phil.cdc.gov/Phil/default.asp>.



Clinical Scenario – Shingles and Post-Herpetic Neuralgia

Questions

1. How is this illness linked to chickenpox?
2. What medication(s) is (are) indicated?
3. What can be done to help protect Louisa and other family members? Will she contract shingles from Ramon?
4. What complications can occur following this illness?
5. What other vaccines are indicated?



Clinical Scenario – Shingles and Post-Herpetic Neuralgia

Answers

1. After chickenpox clears, herpes zoster, the DNA virus that causes chickenpox, survives lifelong in a latent state in the dorsal root ganglia of the spinal cord. Despite the absence of a chickenpox history, almost everyone has been infected.

Disease Risk

Years later with aging or with waning cellular immunity, herpes zoster resurfaces as shingles. More than 90% of the population is at risk for developing shingles, even those who claim to never have had chickenpox. Those over age 60 years are at particular risk. After age 85 years the risk of developing shingles is over 50%. An estimated 1,000,000 cases occur annually in the United States.

Only one (or rarely two adjacent) unilateral dermatome is effected during an episode of shingles so the rash does not cross the midline. The pain from shingles is variable in onset and lasts usually 2 to 4 weeks, resolving as the vesicles scab over and clear. It can be debilitating. Older individuals generally have more severe pain. Those with large numbers of vesicles are more likely to suffer complications, particularly post-herpetic neuralgia (PHN).

Immunogenicity

Cellular immunity provides the major immune response to herpes zoster. Serum antibody levels reflect but do not exactly correlate with the ability to control zoster. Vaccination boosts both cellular immunity and antibody levels.

Whether exposure to chickenpox can trigger shingles is unclear, but exposure to shingles can certainly lead to chickenpox in a non-immune individual, particularly if that individual touches the shingles rash.

Sidebar

The diagnosis is sometimes difficult as shingles pain can mimic many other conditions. Ramon's initial differential diagnoses included: radiculopathy, diabetic neuropathy, and myocardial pain.



Clinical Scenario – Shingles and Post-Herpetic Neuralgia

2. Treatment includes antiviral therapy (acyclovir, famciclovir, valacyclovir) which must be given in high doses within 72 hours to: reduce acute pain and reduce incidence of PHN. Ramon was given acyclovir 800 mg, 5 times a day, for 10 days. Prednisone speeds healing but does not prevent complications. In this case, the diabetes mellitus and hypertension might forestall the prescription of prednisone. Potent pain control medication remains an important component of treatment.

This problem might have been averted had Ramon received herpes zoster vaccine (Zostavax®). This live virus vaccine contains 19,400 CFU of Oka/Merck virus, the same virus used in the chickenpox vaccine (Varivax®). Zostavax® is indicated as a one time subcutaneous immunization for persons age 60 years and older (no upper age limits). It reduces the incidence of shingles by 51% overall, reduces the severity of shingles in those who do develop this problem, and reduces the incidence of post-herpetic neuralgia (PHN) by 67% overall and 39% in those who do still develop shingles. Although the duration of immunity is unknown, the vaccine protects for longer than 4 years. Zostavax® is frozen and must be given within 30 minutes of reconstitution. Side effects are mainly local irritation; otherwise they are similar to placebo (1.4%).

Contraindications are immunocompromise, pregnancy, untreated active tuberculosis, and a history of anaphylactic/anaphylactoid reaction to any vaccine component including gelatin and neomycin (not including dermal reaction). Post vaccination viral transmission is not known to occur and is unlikely due to rapid anamnestic antibody response. Post-vaccination shingles rashes are usually due to wild-type herpes zoster.

3. In this case, Louisa and her mother-in-law should be vaccinated immediately although their risk of contracting shingles from Ramon is minimal. The benefit of vaccination for Ramon is unclear. Only 5% of the population with shingles has recurrences, but as individuals survive to older age and as the number of elderly increase, that risk may increase because immunity may once again falter. Further study should clarify the benefits of vaccination at some future date for those who have already had a case of shingles.





Clinical Scenario – Shingles and Post-Herpetic Neuralgia

All of the grandchildren should receive chickenpox vaccine at the recommended ages of 12 months and 4 to 6 years.



4. Complications of shingles are in the following table.

Complications of Shingles

Neurologic

- Allodynia: pain following generally nonpainful stimuli; 40% incidence
- Post-herpetic neuralgia (PHN): increased incidence with advanced age or with a large number of shingles vesicles
- Motor nerve palsy: often facial nerve VII; eyelid ptosis; Ramsay Hunt syndrome
- Encephalitis: rare
- Transverse myelitis: uncommon
- Sensory neuropathy: common

Cutaneous: extremely common

- Bacterial superinfection: 2%
- Scarring: 8%
- Depigmentation: common

Ophthalmic: 10% of all shingles cases

- Stromal keratitis
- Iritis
- Retinitis
- Visual impairment
- Episcleritis
- Keratopathy

Visceral: unusual

- Pneumonia
- Hepatitis

Psychiatric: common, especially with PHN

- Depression
- Cognitive impairment

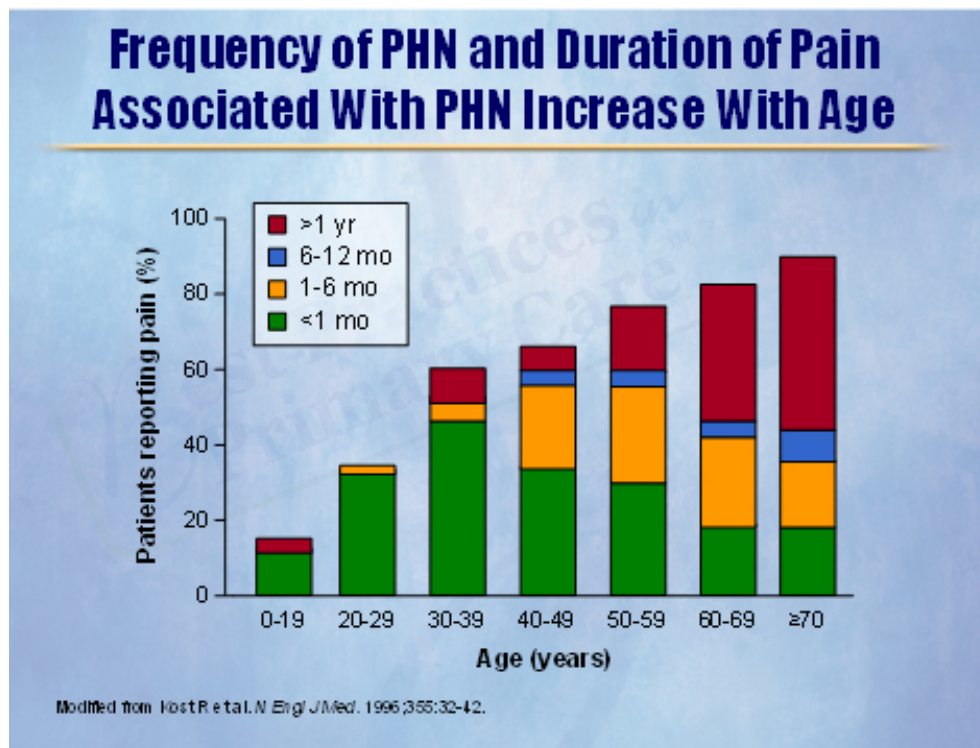


Clinical Scenario – Shingles and Post-Herpetic Neuralgia

5. Ramon and Louisa should also be vaccinated for tetanus if not done within the past 10 years. Ramon (over age 64 years) should receive a Td vaccination while Louisa (under age 65 years) should receive a Tdap vaccination. Both should receive annual influenza vaccine. Lacking any specific indication, Louisa should get a PPV at age 65 years.

Post-Herpetic Neuralgia (PHN)

PHN has variable definition. The most common is pain that is ≥ 3 of 10 lasting for ≥ 90 days. Elderly patients often have PHN that lasts 1 to 2 years and some patients never fully recover, developing chronic dysesthesias or paresthesias. The annual incidence in patients over 80 years of age is roughly 10 per 1000. Older individuals have more severe, longer lasting pain, requiring multiple medications that may cause side effects or interact with other medications given for acute or chronic diseases. PHN can be treated with antidepressants (especially the tricyclics amitriptyline and nortriptyline), analgesics, topical capsaicin, topical lidocaine, anticonvulsants, intrathecal corticosteroids, NMDA receptor antagonists (dextromethorphan), cryotherapy, and/or surgery. Preventive measures include Zostavax® for all persons age 60 years and above.



Kost, Strauss. N Eng J Med. 1996;355:32-42. Copyright © 1996 Massachusetts Medical Society, used with permission.



Clinical Scenario – Shingles and Post-Herpetic Neuralgia

Denouement

Luckily, Ramon was treated early in the course of his illness so may escape the consequence of PHN even though his vesicle count is high.

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