Zoster

treatment and prevention

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Who gets Zoster?

- Zoster occurs when VZ Ab titer and most importantly cellular immunity (T-cells) decline to levels that allow viral reactivation - so particularly common in the aged, immunocompromised patients (HIV) as well as patients on biologics (RA patients) and chemotherapy (oncology patients)

- Unknown why - hypercalcemia (myeloma, hyperparathyroid patients – risk 2X control) and inflammatory bowel disease (even after control for therapies)

- The incidence of herpes zoster increases with age. In the general population, the lifetime incidence rate of herpes zoster is 10-20%, which rises to 50% in those individuals surviving to age 85 years. The incidence of PHN also rises with advancing age.

- Not clear why, incidence in older patients cont to rise, 40% increase last 20 years ?childhood vaccination ? Better diagnosis
Three phases of Zoster

The clinical manifestations of herpes zoster can be divided into the following 3 phases:

• **Pre-eruptive phase** - (Pre-Herpetic Neuralgia)- systemic symptoms plus **pain without rash for 2 to 3 days** in **dermatomal pattern**. May be initially mistaken for MI, appendicitis etc.

• **Acute eruptive phase**- most common **face and chest**- location appears to correlate where heaviest Varicella rash was years earlier-infected most nerve endings in that location and led to latent ganglion infection

• **Chronic phase** - (Post Herpetic Neuralgia)
Acute Herpes Zoster Rash

Order of rash progression

- Vesicles
- Pustular lesions
- Lesions crust over
- Resolution of rash

Zoster Dermatomal distribution-new blisters develop over 3 to 5 days
Why is it important to differentiate Herpes Simplex vs. Herpes Zoster?

• HSV may recur frequently while very unusual for Zoster to happen twice

• Herpes simplex is easily suppressible with chronic acyclovir therapy while it can’t prevent zoster recurrence

• No lab test, only viral culture, can be used to differentiate between HSV and HZV
Contrast with Herpes lesions
Why treat Zoster?

• Hasten resolution of rash
• Pain relief improved with antivirals
• Prevent complications- meningitis, cranial nerve palsies, dissemination, bacterial super-infection
• *Reduce incidence of PHN
• *Reduce complication of VZV vasculopathy- three fold increase in stroke risk in 4 to 12 weeks post infection- particularly Zoster ophthalmicus
Acute Treatment of Zoster

- **STEROIDS**- reduce inflammation of the dorsal root and sensory nerves. Best for severe cases where benefits>risks. **Prednisone** 40mg/day for a few days then taper off.

- **PAIN CONTROL**- critical to reduce risk of PHN- oxycodone, **Neurontin** (not Lyrica) have been proven effective to reduce acute pain.

- **ANTI-VIRALS**- **Famciclovir/Valacyclovir** both work well within 72 hours, still some benefit after that period. Decrease viral shedding and less pain. **Intravenous acyclovir** for eye involvement or immunocompromised patient.

- **TOPICALS**- Wet dressings with 5% aluminum acetate (Burrow solution), applied for 30-60 minutes 4-6 times daily/Calamine/ **Zinc Oxide**- try to prevent scratching leading to scars and infection.
Post-Herpetic Neuralgia (PHN)

• DEFINITION: not agreed upon—any duration of pain after the rash resolves; others define it as duration of pain for more than 30 days, or for more than 90 days after rash onset.

• RISK OF PHN: Older adults are more likely to get PHN and to have longer lasting and more severe pain. Approximately 13% (and possibly more) of people 60 years of age and older with herpes zoster will get PHN. PHN is rare in people younger than 40 years old.

• ADDITIONAL PHN RISK FACTORS: Other predictors of PHN include the degree of pain a person has when they have zoster rash and the size of their rash

• PREVENTION:
  - Vaccination
  - Aggressive treatment of acute zoster and its pain
Prevalence of PHN and Duration of Pain Associated With PHN Increase With Age

## Most common vaccines for adults

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>19-49</th>
<th>50-64</th>
<th>65 and older</th>
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</thead>
<tbody>
<tr>
<td>Influenza vaccine*</td>
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<tr>
<td>Pneumococcal</td>
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<tr>
<td>Hepatitis A</td>
<td></td>
<td>2 doses (6-month minimum between doses)</td>
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<tr>
<td>Hepatitis B</td>
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<tr>
<td>Tetanus, diphtheria</td>
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<td></td>
<td>1-dose booster every 10 years</td>
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<tr>
<td>Tetanus, diphtheria plus pertussis</td>
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<td>1-dose booster</td>
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<tr>
<td>Human papillomavirus**</td>
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<tr>
<td>Zoster (shingles)</td>
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<td>Ages 80 and older</td>
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</tbody>
</table>

* Spray is available for certain adults
**Recommended for girls and women ages 11-26

SOURCE: Immunization Action Coalition
Zoster (Zostavax) Vaccine

• Since 1995, live attenuated VZV vaccine (Varivax) has been available in the United States and has been up to 99% effective in protecting susceptible individuals from varicella infection. The higher-potency live attenuated VZV vaccine was introduced in 2005 (Zostavax)

• FDA approval in 2006 after the Shingles Prevention Study:
  38,000 adults > 60 years studied, 61% drop in Zoster incidence, 65% drop in PHN rate

• FDA in 2011 lowered approved age to 50 for Zostavax after study of vaccine in ages 50 to 59 showed 70% reduction in incidence. For multiple reasons, the CDC’s Advisory Committee on Vaccines still does not recommend giving Zostavax until age 60.

• New Study Report: older patients found to have 10x greater likelihood of getting vaccine if it was recommended by their primary care doctor
Zostavax Indications

- **non-immunocompromised people > 60 years**, including those who had prior episode of shingles (FDA OK'd down to age 50)

- Patients should get this vaccine prior to starting biologics or chemotherapy. **HIV infection or long term steroid use are contraindications**

- **No cases ever documented** of a patient receiving Zostavax transmitting chicken pox to a immunocompromised or pregnant person in their household

- **Do not check a VZV serology** before vaccine administration (>99% of adults> 40 years have + antibodies)

- **Only one dose**, no indication for booster later on

- Least cost for the patient is to get it with a prescription at a participating pharmacy in his Medicare Part D plan. Unlike other vaccines, not covered by Part B. Very confusing.
Herpes simplex or Herpes Zoster?
Diagnosis?
Shingles Humor

Looks really painful!

Why's it called Shingles?

'Cause ya want to jump off the roof.

I'm afraid it's bad news Mr. Kane.... you've got shingles.