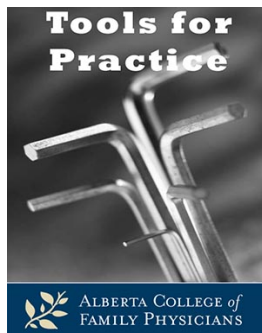


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November 12, 2012



## **Zoster vaccine: Zoster loster or imposter coster?**

### **Clinical Question: What are the benefits of the zoster vaccine to our patients?**

#### **Evidence:**

Two large industry-supported multi-centre randomized controlled trials (RCT) of zoster vaccine (Zostavax) or placebo vaccine:

- RCT of 38,546 immunocompetent patients age  $\geq 60$  (Median age 69, 59% male).<sup>1</sup>  
Outcomes at 3 years:
  - Zoster (herpes zoster (HZ), shingles) incidence:
    - Vaccine = 1.67%, placebo = 3.42%,  
Number Needed to Treat (NNT) 58
  - Postherpetic neuralgia (PHN) incidence:
    - Vaccine = 0.14%, placebo = 0.42%, NNT 358
  - Seven year outcomes of a sub-group of patients not helpful as all placebo patients offered vaccine and numbers difficult to interpret.<sup>2</sup>
- RCT of 22,439 immunocompetent 50-59 year olds (Mean age 55, 62% female).<sup>3</sup>  
Followed 1.3 years:
  - Zoster incidence:
    - Vaccine = 0.27%, placebo = 0.88%, NNT 164
    - Conversion to 3 years, NNT 71
  - Limitations: short follow up, PHN rates not reported.
- Adverse Events: ~2% more patients had systemic adverse events<sup>1,3,4</sup> and serious adverse events also slightly greater with vaccine (1.9% versus 1.3%).<sup>1</sup>

#### **Context:**

- Although vaccine reduces relative risk of HZ 50-70%, 60-70 patients are vaccinated to prevent 1 HZ over 3 years.<sup>1,3</sup>
- HZ rates increase with age: 3/1,000 per year in 40-64 years to 7.5/1,000 per year in  $\geq 75$  years.<sup>5</sup>
  - Overall, about 11% of patients  $\geq 60$  years old who develop HZ develop PHN.<sup>1</sup>
  - PHN risk increases with age,<sup>6,7</sup> and is rare (~1%) when  $< 50$  years.<sup>6</sup>

- Recurrent HZ rates are low,<sup>1,8</sup> but may be as high as 5.7% over seven years if immunocompromised patients are included.<sup>9</sup>
- Zoster vaccine guideline recommendations:
  - Canada: vaccinate ≥60 years, may vaccinate 50-59 years old<sup>10</sup>
  - US: vaccinate ≥60 years, do not recommend vaccinating 50-59 years (due to vaccine supply issues)<sup>11</sup>
- Cost of the vaccine ~\$200
- Remaining questions:
  - Safe and effective in immunocompromised patients?
  - Beneficial for patients with previous HZ?
  - Long-term efficacy (will booster be required)?

**Bottom-line: Over 3 years, zoster vaccine will prevent one herpes zoster for every 60-70 patients vaccinated, and one postherpetic neuralgia in 350. Long-term benefits and effectiveness in specific patient populations (immunocompromised, previous HZ) are unclear.**

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