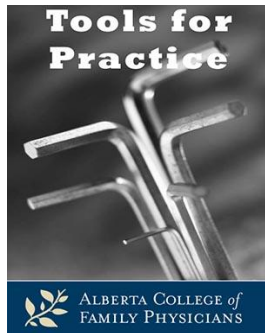


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## **Zoster Vaccine – is newer better than the old new?**

**Clinical Question: Is there a difference in efficacy between the new, recombinant (Shingrix®) and the live (Zostavax®) zoster vaccines?**

**Bottom Line: Recombinant zoster vaccine appears more efficacious than the live vaccine. Over three years, recombinant zoster vaccine prevents one additional case of herpes zoster (shingles) for about every 40 patients treated compared to one for every 60-70 with live vaccine. Both vaccines decrease the risk of post-herpetic neuralgia. The recombinant vaccine is more expensive and requires two injections whereas the live vaccine only requires one.**

### **Evidence:**

- Two industry-supported randomized, placebo-controlled trials (RCTs) of recombinant zoster vaccine in immunocompetent patients without previous zoster infection or vaccine.<sup>1,2</sup> Authors calculated Numbers Needed to Treat (NNTs) (assuming linear rates of disease) at 3 years to indirectly compare to live zoster vaccine.
  - Herpes Zoster (shingles):
    - Adults >50 years old:<sup>1</sup> 15,411 patients; mean age 62.
      - Recombinant: 0.08% versus 2.7% placebo, NNT~40.
      - Comparable live vaccine RCT:<sup>3,4</sup> NNT~70.
    - Adults > 70 years old:<sup>2</sup> 13,900 patients; mean age 76.
      - Recombinant:<sup>2</sup> 0.4% versus 3.5% placebo, NNT ~40.
      - Comparable live vaccine RCT<sup>5</sup> (patients ≥ 60 years): NNT~60.
  - Post-herpetic neuralgia:
    - All ages:
      - Recombinant:<sup>1,2</sup> NNT=333 at 3.8 years or 422 at 3 years.
      - Live vaccine:<sup>3,5</sup> NNT~360.
    - >70 years old:
      - Recombinant:<sup>1,2</sup> NNT=335.
      - Live vaccine:<sup>5</sup> NNT=260.
  - Serious Adverse Events:<sup>1,5</sup>
    - Recombinant 1.1%, Live 1.9%, Placebo 1.3%.
  - Limitations with recombinant studies: blinding questionable.<sup>1,2</sup>

- No head-to-head RCTs comparing live and recombinant vaccines with clinical outcomes exist.
- No RCTs with clinical outcomes exist in patients who previously:
  - Received zoster vaccine, or
  - Had shingles.

#### **Context:**

- Recombinant zoster vaccine differs from live:
  - Two doses, 2-6 months apart versus 1 for live.<sup>6,7</sup>
  - Costs ~40% more: ~\$250 versus \$180 for live.<sup>8</sup>
- Current recommendations:
  - Canada:<sup>9</sup> offer recombinant vaccine to patients:
    - ≥50 years
    - who previously received live vaccine or had a previous episode of shingles.
  - United States:<sup>7</sup>
    - 50-59 years: recombinant vaccine regardless of zoster infection or vaccine history.
    - >60 years: either vaccine.
- Neither vaccine recommended in pregnant patients.<sup>6,7,9</sup>
  - Recombinant may be considered in immunocompromised patients.<sup>9</sup>

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#### **Disclosure:**

Authors do not have any conflicts of interest to declare.

#### **References:**

1. Lal H, Cunningham AL, Godeaux O, *et al.* N Engl J Med. 2015; 372:2087-96.
2. Cunningham AL, Lal H, Kovac R, *et al.* N Engl J Med. 2016; 375:1019-32.
3. Schmader KE, Levin MJ, Gnann JW, *et al.* Clin Infect Dis. 2012; 54(7):922-8.
4. Kolber MR, Nickonchuk T. Tools for Practice. Available at: [https://www.acfp.ca/wp-content/uploads/tools-for-practice/1482257389\\_2016updatedtfp77zostervaccine.pdf](https://www.acfp.ca/wp-content/uploads/tools-for-practice/1482257389_2016updatedtfp77zostervaccine.pdf). Accessed October 17, 2018.
5. Oxman MN, Levin MJ, Johnson GR, *et al.* N Engl J Med. 2005; 352:2271-84.
6. GlaxoSmithKline Inc. PRODUCT MONOGRAPH INCLUDING PATIENT MEDICATION INFORMATION SHINGRIX Oct 17, 2017. Available at [https://ca.gsk.com/media/1350788/shingrix\\_pm-2017-10-13.pdf](https://ca.gsk.com/media/1350788/shingrix_pm-2017-10-13.pdf) Accessed June 18, 2018.
7. Kim DK, Riley LE, Hunter P. MMWR Morb Mortal Wkly Rep. 2018; 67(5): 158-160.
8. Alberta Blue Cross Drug Price List. Available at: [https://www.ab.bluecross.ca/dbl/pdfs/ABCDPL\\_2018\\_06\\_05.pdf](https://www.ab.bluecross.ca/dbl/pdfs/ABCDPL_2018_06_05.pdf). Published June 14, 2018. Accessed June 20, 2018.
9. NACI Advisory Committee Statement (ACS) – Updated Recommendations on the Use of Herpes Zoster Vaccines. August 2018 Available at: <https://www.canada.ca/en/public-health/services/immunization/national-advisory-committee-on-immunization-naci.html>. Accessed Nov 3, 2018.

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