Zoster vaccine: is newer better?

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Clinical question

Is there a difference in efficacy between the new, recombinant zoster vaccine (RZV) and the live zoster vaccine (LZV)?

Bottom line

Recombinant zoster vaccine appears more efficacious than LZV. Over 3 years, RZV prevents 1 additional case of herpes zoster (HZ) for about every 40 patients treated compared with 1 for every 60 to 70 with LZV. Both vaccines decrease the risk of postherpetic neuralgia. Recombinant zoster vaccine is more expensive and requires 2 injections whereas LZV only requires 1.

Evidence

There were 2 industry-supported placebo-controlled RCTs of RZV in immunocompetent patients without previous zoster infection or vaccine.[1,2] Authors calculated numbers needed to treat (NNTs) (assuming linear disease rates) at 3 years to indirectly compare to LZV.

- Studies of efficacy against HZ showed the following:
  -In adults older than 50 years (N = 15 411; mean age 62), 0.08% had HZ with RZV versus 2.7% with placebo (NNT of about 40).[1] In a comparable live-vaccine RCT, the NNT was about 70.[3,4]
  -In adults older than 70 years (N = 13 900; mean age 76), 0.4% of patients had HZ versus 3.5% with placebo (NNT of about 40).[2] In a comparable live-vaccine RCT (patients ≥ 60 years), the NNT was about 60.[5]
- Studies of postherpetic neuralgia showed the following:
  -For all ages, RZV had an NNT of 333 at 3.8 years or 422 at 3 years.[1,2] Live vaccine[3,5] had an NNT of about 360.
  -For those older than 70 years, RZV had an NNT of 335[1,2] and LZV had an NNT of 260.[5]
- Serious adverse events occurred in 1.1% of those who had RZV, 1.9% of those who had LZV, and 1.3% of those who had placebo.[1,5]
- Limitations with RZV studies were that blinding was questionable.[1,2] No head-to-head RCTs comparing LZVs and RZVs with clinical outcomes exist. No RCTs with clinical outcomes exist of patients who previously had any zoster vaccine or HZ.

Context

- Recombinant zoster vaccine differs from LZV in that 2 doses, 2 to 6 months apart are needed for RZV versus 1 for LZV.[6,7] Recombinant zoster vaccine costs about 40% more (about $250 vs $180 for LZV).[8]
- Current recommendations in Canada[9] are to offer RZV to patients 50 years or older who previously received LZV or previously had HZ. In the United States,[7] in those aged 50 to 59 years, RZV is recommended regardless of zoster infection or vaccine history; in those older than 60 years, either vaccine is given.
- Neither vaccine is recommended for pregnant patients.[6,7,9] Recombinant zoster vaccine might be considered in immunocompromised patients.[9]

Implementation

Annual rates of HZ increase with age, from about 4 in 1000 in those aged 40 to 64 to about 7 in 1000 in those 65 and older.[10] Postherpetic neuralgia develops in 5% to 30% of HZ patients and also increases with age.[11] Risk of HZ recurrence ranges from 2% to 6%.[11] Patients who are or will be immunocompromised have a higher baseline and recurrence risk and should be encouraged to be vaccinated with RZV.[9] If vaccinating patients who have had HZ or have received LZV, wait 1 year.[9] Indirect comparison suggests, compared with LZV, 112 patients would have to be vaccinated with RZV to prevent 1 additional case of HZ.[12]

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Competing interests
None declared

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