Weighing the options: Two shingles vaccines available for older adults

About one in three Canadians will develop shingles (zoster) in their lifetime (with incidence increasing after 50 years of age), and up to 40% of zoster cases are associated with one or more complications, most prominently zoster ophthalmicus and post-herpetic neuralgia (PHN). PHN is more common in older people, affecting 4% to 15% of zoster cases in people aged 50 to 59, 7% to 26% of cases in people aged 60 to 69, and 14% to 29% of cases in people 70 years and older.[1]

Zoster and its attendant complications are preventable by vaccination, and two vaccines are approved for use in Canada. The recently approved adjuvanted recombinant vaccine offers appreciably higher and durable protection rates and is associated with more, albeit tolerable, reactogenicity, and physicians should become familiar with these differences in order to provide appropriate counseling to patients who are considering the vaccine, which is available through the private market. At present only Ontario offers publicly funded zoster vaccine, having introduced the live vaccine in 2016 for those aged 65 to 70.

The live attenuated zoster vaccine (Zostavax II, Merck Canada Inc.) approved in 2008 in a formulation requiring freezer storage, has been marketed as a fridge-stable formulation in Canada since April 2014 and continues to be available on the private market. In the pivotal clinical trial, this vaccine was found to have an efficacy of 64% (95% CI, 56-71) in persons aged 60 to 69 against incident zoster but only 38% (95% CI, 25-48) in those aged 70 and older (median follow-up time: 3.1 years), and 66.5% against post-herpetic neuralgia unaffected by age.[2] This vaccine is given as a single dose subcutaneously. In postmarketing studies, waning of immunity occurs beginning the first year after vaccination, with limited remaining protection after 6 years; this waning is more marked when the vaccine is given at older ages.[3] While the vaccine has some limited indications in select individuals with immunocompromise, it is generally contraindicated in this group of patients.

RZV is given as a 2-dose series intramuscularly, 2 to 6 months apart.

A non-live adjuvanted subunit vaccine (Shingrix®, GlaxoSmithKline Inc., varicella zoster virus glycoprotein E recombinant [RZV]) was approved by Health Canada in October 2017 for adults aged 50 and older.[4] The adjuvant is unique to this vaccine ($AS01_B$), and is composed of liposomes containing two immunostimulants: 3-O-desacyl-4'-monophosphoryl lipid A from *Salmonella minnesota* combined with 1 mg of dioleoyl phosphatidylcholine (DOPC) and 0.25 mg cholesterol, and *Quillaja saponaria* Molina.

RZV is given as a 2-dose series intramuscularly, 2 to 6 months apart. The vaccine has performed well in clinical trials with 3-year vaccine efficacy against zoster at 97% in people aged 50 to 69 and 91% (a difference that is not statistically significantly lower) for those 70 and older.[5,6] Efficacy against PHN was 91% (95% CI, 75.9-97.7) for those 50 and older, and 89% for those 70 and older (95% CI, 68.7%-97.1%). This vaccine is expected to have value for immunocompromised people who cannot receive the live vaccine, and while specific indications for this subpopulation are not yet listed in the product monograph with studies being conducted in people infected with HIV, solid tumors, organ transplant, and HSCT recipients, it is not contraindicated for the immunocompromised. The immune response following RZV appears durable with data available to 4 years at this time and no statistically significant declines observed.

Safety of RZV has been assessed in seven randomized clinical trials with the largest studies referenced above having over 14 000 enrolled older adults. Local reactions were common, with a median duration of 2 to 3 days; 80% of subjects reported pain and 30% reported redness; grade 3 reactions (interfering with activities of daily living) were reported by 8.5% and 9.5% of recipients 70 and older, and 50 and older, respectively, compared to 0.2% and 1.9% by the corresponding placebo recipients. Systemic adverse events of fatigue and myalgia were reported in half of recipients, and headache in 40%; median duration was 1 to 2 days. Grade 3 systemic events were reported by 11.4% of vaccine recipients compared to 2.4% of placebo recipients, and at lower frequencies in those 70 and older (6% and 2%, respectively); these were more common after the second dose. Serious adverse event rates were similar in vaccine and placebo groups, and none were considered vaccine related.

This article is the opinion of the BC Centre for Disease Control and has not been peer reviewed by the BCMJ *Editorial Board.*

In a prepublication statement, the Canadian National Advisory Committee on Immunization (NACI) recommends that for those who have received the live vaccine or experienced an episode of zoster, RZV can be administered 1 year later.[7] NACI further recommends that the live vaccine should be offered to those without contraindications only if the RZV cannot be given (e.g., due to contraindications or unavailability). The US Advisory Committee on Immunization Practices (ACIP) recommends preferential use of RZV over the LZV, while continuing to recommend that LZV may be used in immunocompetent adults 60 and older.[3]

Both NACI and ACIP recommend that RZV may be given at the same visit as influenza vaccine and other vaccines intended for adults, including pneumococcal polysaccharide vaccine and tetanus-diphtheria containing vaccines; a study with quadrivalent influenza vaccine has been completed and showed no interference, and studies with the other vaccines are in progress.

—Monika Naus, MD, MHSc, FRCPC, FACPM, Medical Director, Communicable Diseases and Immunization Service

References

1. Kawai K, Gebremeskel BG, Acosta CJ. Systematic review of incidence and complications of herpes zoster: Towards a global perspective. BMJ Open 2014;4: 1-18.
2. Oxman MN, Levin MJ, Johnson GR, et al. A vaccine to prevent herpes zoster and postherpetic neuralgia in older adults. N Engl J Med 2005;352:2271-2284.
3. Dooling K, Guo A, Patel M, et al. Recommendations of the Advisory Committee on Immunization Practices for Use of Herpes Zoster Vaccines. MMWR Morb Mortal Wkly Rep 2018;67:103-108.
4. SHINGRIX Product Monograph. GlaxoSmithKline Canada Inc. Date of Approval 13 October 2017. Accessed 20 July 2018. http://ca.gsk.com/media/1350788/shingrix_pm-2017-10-13.pdf.
5. Lal H, Cunningham A, Godeaux O, et al. Efficacy of an adjuvanted herpes zoster subunit vacation in older adults. N Engl J Med 2015;372:2087-2096.
6. Cunningham A, Lal Hi, Kovac M, et al. Efficacy of herpes zoster subunit vaccine in adults 70 years of age or older. N Engl J Med 2016;375:1019-1032.
7. Public Health Agency of Canada. National Advisory Committee on Immunization. Updated recommendations on the use of herpes zoster vaccines. Advance copy, June 2018, provided to provincial immunization programs. Pages 1-72.

Continued from page 370

working together to bring local needs-based solutions to fruition.

A new round of Shared Care funding will be available this fall for applications for other communities wanting to explore ways to improve maternity care collaboration in their region. For more information, contact Nancy Falconer at nfalconer@doctorsofbc.ca.

—Nancy Falconer
Shared Care Liaison, Maternity Network
—Lee Yeates, RM, MHM
Collaborative Practice Consultant, Maternity Network

References

1. Blanchard MH, Kriebs JM. A successful model of collaborative practice in a university-based maternity care setting. Obstet Gynecol Clin North Am 2012;39:367-372.
2. Harris SJ, Janssen PA, Saxell L, et al. Effect of a collaborative interdisciplinary maternity care program on perinatal outcomes. CMAJ 2012;184:1885-1892.
3. Peterson WE, Medves JM, Davies BL, Graham ID. Multidisciplinary collaborative maternity care in Canada: Easier said than done. J Obstet Gynaecol Can 2007;29:880-886.