State of Alaska Epidemiology Bulletin

Department of Health and Social Services
Valerie J. Davidson, Commissioner

3601 C Street, Suite 540
Anchorage, Alaska 99503 http://dhss.alaska.gov/dph/Epi

Division of Public Health
Jay C. Butler, MD, Chief Medical Officer and Director
Local (907) 269-8000
24 Hour Emergency (800) 478-0084

Editors:
Joe McLaughlin, MD, MPH
Louisa Castrodale, DVM, MPH

Bulletin No. 3 May 2, 2018

Recommendations for Use of Herpes Zoster Vaccines

Background

On October 20, 2017, the U.S. Food and Drug Administration approved Shingrix, a new recombinant zoster vaccine (RZV; GlaxoSmithKline), for the prevention of herpes zoster.[1] On October 25, 2017, the Advisory Committee on Immunization Practices (ACIP) recommended RZV for use in immunocompetent adults aged ≥50 years (Box). The other herpes zoster vaccine, Zostavax or zoster vaccine live (ZVL; Merck and Co., Inc.), was first recommended by ACIP in 2008 for use in immunocompetent adults aged ≥60 years.

Box. New Herpes Zoster Vaccine Recommendations

In October 2017, ACIP made the following new recommendations for the use of herpes zoster vaccines:[1]

1. recombinant zoster vaccine (RZV) is recommended for the prevention of herpes zoster for immunocompetent adults aged ≥50 years,
2. RZV is recommended for immunocompetent adults who previously received zoster vaccine live (ZVL), and
3. RZV is preferred over ZVL.

These recommendations serve as an update to the existing recommendations for the use of ZVL in immunocompetent adults aged ≥60 years.

Shingles Overview

Shingles (or herpes zoster) is characterized by a painful, blistery rash in one or two adjacent dermatomes resulting from reactivation of latent varicella zoster virus in persons who have had chickenpox.[1] Approximately 1 million cases occur each year in the United States. The incidence increases with age, from five cases per 1,000 persons in adults aged 50–59 years to 11 cases per 1,000 persons in adults aged ≥80 years. The most common complication of shingles is postherpetic neuralgia, persistent pain that lasts at least 90 days following the resolution of the rash. Postherpetic neuralgia occurs in up to 13% of herpes zoster cases in persons aged >50 years; the risk of postherpetic neuralgia increases with age.

Recombinant Zoster Vaccine

RZV is a 2-dose, non-live, subunit vaccine containing a novel adjuvant ($AS01_B$) and recombinant varicella-zoster virus glycoprotein E (gE).[1,2] RZV is prepared by reconstituting the lyophilized gE antigen component with the accompanying $AS01_B$ adjuvant suspension. The reconstituted vaccine should be an opalescent, colorless to pale brownish liquid. RZV is the only zoster vaccine available with an adjuvant. Compared to ZVL, RZV is considerably more effective at preventing shingles and postherpetic neuralgia (Tables 1 and 2).

Table 1. Efficacy for the Prevention of Shingles, RZV versus ZVL

	Age (years)	Efficacy (%)
RZV	50–59	96.6
	60–69	97.4
	≥70	91.3
ZVL	50–59	70
	60–69	64
	≥70	38

Table 2. Efficacy for the Prevention of Postherpetic Neuralgia, RZV versus ZVL

	Age (years)	Efficacy (%)
RZV	≥50	91.2
	≥70	88.8
ZVL	60–69	65.7
	≥70	66.8

Adverse Reactions

The most common side effects of RZV were pain, redness, and swelling at the injection site; muscle pain; tiredness; headache; shivering; fever; and upset stomach.[1,2] The majority of reactions to the vaccine were transient and mild-to-moderate in intensity, lasting ≤3 days. Any adverse reactions following vaccination can be reported to the Vaccine Adverse Events Reporting System (VAERS; https://vaers.hhs.gov/index.html).

Recommended Schedule

RZV should be administered to adults aged ≥50 years as a two-dose series (0.5 ml each), 2–6 months apart (0, 2–6 months).[1,2] RZV should be injected intramuscularly in the deltoid region of the upper arm. If >6 months has elapsed since the first dose, it is not necessary to restart the vaccine series, but the second dose should be administered as soon as possible. If the second dose is given <4 weeks after the first dose, the second dose should be considered invalid. A valid second dose should be administered 2 months after the invalid dose. Two doses are necessary regardless of prior history of herpes zoster or prior receipt of ZVL. If a patient has been previously vaccinated with ZVL, RZV should not be given <2 months following ZVL administration.[1] RZV can be administered with other vaccines at different anatomic sites.

Vaccine Availability[3]

RZV is now available on the Alaska Immunization Program's formulary. Adults aged 50 through 64 years are eligible to receive RZV if they meet all other eligibility criteria for state-supplied vaccines. Providers should screen patients at each vaccination visit to determine eligibility, and accurately document administration data into VacTrAK (Alaska's immunization information system). Due to the ACIP recommendation that RZV is *preferred* over ZVL, providers may order RZV and return any doses of ZVL to the Alaska Immunization Program. Instructions on how to return ZVL will be posted on the Alaska Immunization Program's website and emailed to providers receiving state-supplied vaccine (see: http://dhss.alaska.gov/dph/Epi/iz/Documents/vaxpacket/forms/Zostavax_recall_instructions.pdf).

Contraindications and Precautions[1,2]

RZV should not be administered to the following persons:

- A person with a history of severe allergic reaction to any component of this vaccine.
- A person who is known to be seronegative for varicella (it is not necessary to screen for a history of varicella).
- A person experiencing an acute herpes zoster infection.
- A woman who is pregnant or breastfeeding (consider delaying immunization with RZV).

Vaccine Storage

RZV is stored in the *refrigerator* and administered *intramuscularly*, while ZVL is stored in the freezer and administered subcutaneously.[1] Both components of RZV (i.e., adjuvant and antigen) must be stored between 36°F–46°F (2°C–8°C) and protected from light.[1,2] Do not freeze either one of the components. If accidentally frozen, discard the component. After reconstitution, administer RZV immediately or refrigerate at 36°F–46° F (2°C–8°C) and use within 6 hours. Discard the reconstituted vaccine if not used within 6 hours.

References

1. CDC. Recommendations of the ACIP for Use of Herpes Zoster Vaccines. Available at: http://dx.doi.org/10.15585/mmwr.mm6703a5
2. FDA Product approval package insert. 2017. Available at: https://www.fda.gov/downloads/BiologicsBloodVaccines/Vaccines/ApprovedProducts/UCM581605.pdf
3. Alaska Immunization Program homepage. Available at: http://dhss.alaska.gov/dph/Epi/iz/Pages/default.aspx

(Contributed by: Matthew Bobo, MPH and Sarah Aho, MPH, Alaska Section of Epidemiology, Immunization Program.)