Smallpox Vaccination

Vaccination Method & Reactions

About the Vaccine
The vaccine (vaccinia) is a live virus that propagates in the skin. Unlike other immunizations, smallpox vaccination is characterized by a virus that propagates in the skin and mucosa of others with whom the infected person comes in contact.

The vaccinia (smallpox) vaccine is a live virus that contains variola virus, the virus that causes smallpox. A "take" of the vaccine means that vaccinia virus replicates in the红酒1 skin and mucosa of the vaccinated person. The immune response to an intact vaccine results in the production of specific antibodies and T-lymphocytes that are retained.

Recommended vaccination method:
Multiple poxvirus vaccines on the market are considered to be equivalent, and the decision about which to use is based on local availability and the technical expertise of the vaccination personnel. The guide also includes images and text to help vaccination personnel identify typical vaccine reactions, both normal and abnormal.

Vaccination Method & Reactions

Normal Reaction Timeline

In the event of a smallpox outbreak, those who are vaccinated will be isolated for 14 days after successful vaccination, and for 5 days after a witnessed reaction to a vaccination. The isolation period is determined by local authorities and is usually based on the incubation period, which is approximately 10 days.

Step-by-Step Instructions

1. Wipe site dry with alcohol. 2. After 10-15 minutes, mark the site with a ruler. 3. With the vaccine vial at an angle of 45 degrees, inject a small drop of vaccine into the mark. 4. Use a standard 0.5 ml syringe with a 20 gauge 1 inch needle. 5. The amount of vaccine for the injection is approximately 0.1 ml (0.5 ml/ml).

Normal Variants/Revaccination

If a patient has never had a successful "take," the patient should be offered revaccination. The patient should be informed that revaccination is usually performed at least once every 5 years.

Vaccinia Immune Globulin (VIG)

Vaccinia immune globulin (VIG) is a human serum product that contains antibodies against smallpox. It is administered intramuscularly (IM) or intravenously (IV). The usual dose of IM-VIG is 0.6 ml/kg body weight. The usual dose of IV-VIG is 0.1 ml/kg body weight.

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ADVERSE REACTIONS

Severity:

10-14 days after vaccination with headache, vomiting, vaccination lesion. Please call your state or local public health department to report adverse events or request consultation about suspected adverse events occurring after vaccination.

Bacterial Infections

VIG: Not Recommended for mild instances
VIG: Indicated with extensive lesions

Common

Frequency:

Mild to Severe - Hospitalize severe

Erythema Multiforme

VIG:

Most Common (exception: SJR - rare)

Generalized Vaccinia

VIG:

Rare

Progressive Vaccinia

VIG:

Rare

Vaccinia Keratitis

VIG:

Contraband

Eczema Vaccinatum

VIG:

Unknown

Progressive Vaccinoconjunctivitis

VIG:

Unknown

Generalized vaccinia is a rare complication occurring in 1-2% of typical vaccinations and usually can be distinguished on clinical grounds from general vaccinial exanthem.

Most instances of generalized vaccinia, particularly if occurring in the setting of immunocompromised hosts, require hospitalization and supportive care.

Progressive Vaccinoconjunctivitis is a complication occurring in 2-5% of typical vaccinations. Consultation with an experienced ophthalmologist is strongly recommended.

Vaccinia Keratitis is a very rare complication occurring in persons immunosuppressed with cancer, immunosuppressive therapy, iatrogenic immunosuppression, or other conditions.

Photographs courtesy of Vincent Fulginiti MD, Henry Kempe MD, NIH, and H. Schonberg MD, NIH.

For more information, please go to: http://www.niaid.nih.gov/immunize/vacc_events.htm

Please note: This document is not intended to replace licensed professional advice and should not be considered exhaustive.