

INFORMATION PAPER

Military Vaccine Agency
18 October 2011

SUBJECT: Varicella Zoster and the Chickenpox Vaccine

1. Purpose: To describe Varicella Zoster and the Chickenpox vaccine

2. Facts.

a. Microbiology. Chickenpox is a highly contagious viral infection caused by a virus called varicella-zoster virus (VZV). VZV is a member of the herpes virus group. Similar to other herpes viruses it remains dormant in the body after initial infection and may cause a latent infection later in life. VZV remains in the sensory nerve ganglia and may result in a recurrent infection known as shingles.

b. Disease. Symptoms generally appear within 14 to 16 days after being exposed. A rash is the first sign of disease in children but adults often experience fever and malaise before rash onset. The rash is generalized, pruritic and progresses rapidly from macules to papules to vesicular lesions before crusting. The rash usually appears first on the head, then on the trunk, and then the extremities; with the highest concentration of lesions on the trunk. Lesions can also occur on mucous membranes at the back of the mouth, respiratory tract, conjunctiva, and the cornea. Although the symptoms can be uncomfortable and limit normal activities, the disease is usually mild and rarely serious. In most healthy children, chickenpox lasts up to 2 weeks and rarely causes serious complications. However, in adults, newborn babies, and children with weakened immune systems it can be a serious, long-lasting disease.

c. Epidemiology. Varicella zoster virus spreads from person to person via airborne respiratory droplets or by direct contact with the fluid inside chickenpox lesions. Persons are most contagious from one to two days before rash onset until all the lesions have formed crusts. Epidemics are possible throughout the year, but are most common in later winter and early spring. About 3.5 million cases of varicella occurred annually from 1980 to 1994 in the United States and about 90% of cases occurred in children younger than 15 years of age.

d. Vaccine. There are two varicella virus containing vaccines licensed in the US. Varivax® by Merck is a live, attenuated (weakened) viral vaccine that was licensed in 1995. The vaccine is for persons 12 months and older. In children, a single dose of vaccine is at least 91% effective in preventing chickenpox. A second varicella virus-containing combination vaccine, licensed in 2005, includes antigens for measles, mumps, and rubella and is marketed as ProQuad® (manufactured by Merck). ProQuad® is indicated for children 12 months to 12 years of age and may be used in the same age group if a second dose of MMR-II® is to be administered.

e. Cautions. The following people should not receive the varicella vaccine: people with a severe allergic reaction to any of the vaccine components. Do not administer varicella vaccine to women known to be pregnant or attempting to become pregnant. Advise women to avoid pregnancy for one month after varicella vaccination. People who are immune suppressed due to medications or diseases; and people with cellular immune deficiency are potentially at greater risk for complications after receiving a live-virus vaccine, encourage these vaccinees to return for evaluation if they experience a varicella-like rash after vaccination. Advise parents to avoid use of aspirin containing products for 6 weeks after their child's varicella vaccination, as Reye Syndrome can follow use of aspirin during a natural varicella infection.

f. Immunization. Children should receive a single 0.5-mL dose administered subcutaneously, at 12 to 15 months of age with a second dose at four to six years. Adolescents and adults 13 years of age and older should receive two 0.5-mL doses 4 to 8 weeks apart, although the second dose may be administered at any time without repeating the first dose. Adults who previously received only one dose of vaccine should receive a second dose. Measles-mumps-rubella (MMR) vaccine and other routine childhood vaccines may be administered simultaneously. If varicella and other live vaccines are not administered at the same visit, separate them by at least 28 days.

g. Adverse Events. The most common adverse reactions after varicella vaccination are fever and injection-site complaints such as pain, soreness, redness, and swelling. Less common reactions include local and generalized rashes.

h. DoD Policy. Use varicella vaccine in accordance with the recommendations of the Advisory Committee for Immunization Practices (ACIP).

(1) Basic enlisted trainees and other accessions. Administer varicella vaccine to susceptible trainees and other accessions within the first two weeks of training in accordance with the Accessions Screening and Immunization program (ASIP). Serologic screening of trainees is the preferred means of determining those susceptible to varicella infection and in need of immunization. If serologic screening is not feasible, people may be questioned for indicators of pre-existing immunity. Identify those people who do not have a personal history of varicella disease, documentation of prior varicella immunization, or documentation of immunity based on serologic testing as susceptible. Document results of serologic testing in a DoD-approved electronic ITS and on the deployable health record.

(2) Healthcare workers. Administer varicella vaccine to susceptible healthcare workers. Determine susceptibility as noted above for trainees. Routine post-immunization testing for antibodies to varicella is not recommended.

i. Special Considerations: The viruses within varicella vaccine are fragile and must be handled carefully. To maintain potency, the freeze-dried vaccine must be frozen at an average temperature of +5°F (-15°C) or colder until it is reconstituted for injection. Store the diluent separately at room temperature or in the refrigerator. Discard the

Military Vaccine Agency
Varicella Zoster and the Chickenpox Vaccine

vaccine if it is not used within 30 minutes after reconstitution. Protect the vaccine from light at all times because such exposure may inactivate the vaccine viruses.

3. References.

a. Centers for Disease Control and Prevention. Prevention of Varicella. Recommendations of the Advisory Committee on Immunization Practices. MMWR 2007;56(No. RR-4). <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5604a1.htm>

b. Centers for Disease Control and Prevention. Use of Combination Measles, Mumps, Rubella, and Varicella Vaccine Recommendations of the Advisory Committee on Immunization Practices. MMWR 2010;59(No. RR-3). <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5903a1.htm>

c. Multiple resources (e.g., Vaccine Information Statements, package inserts) assembled by Military Vaccine Agency: www.vaccines.mil/chickenpox

Jateya Jones/ (703) 325-6579

Approved by: LTC Garman