

**Florida Poison Information Center/Jacksonville
At Shands Jacksonville
University of Florida Health Science Center
1-800-222-1222**

Small Pox

Mechanism of Action/Properties

Smallpox is caused by Variola virus, an Orthopoxvirus in the Poxviridae family. It has no known reservoir other than humans. It is spread by inhalation of the virus which enters the respiratory tract, multiplies locally, and then disseminates to other organs (spleen, liver, lung) via the circulation. Smallpox was declared eradicated in 1980. The United States stopped civilian vaccinations in 1981, and the U.S. military stopped vaccinations in 1989. However, both the United States and Russia possess repositories of the virus. It would be relatively easy to produce and disseminate.

Clinical Features

Smallpox existed as two forms - variola minor and variola major. Variola major is a more serious illness with a mortality rate of 20 - 40 %. Variola major is divided into five categories:

1. Ordinary type: Comprised greater than 70% of cases. It is characterized by a rash that may be confluent, semiconfluent, or discrete. The incubation period is 7 - 19 days. It typically starts with an influenza - type syndrome, including fever, headache, and malaise. The rash starts within the first 2 - 3 days and may continue to evolve over the next 10 days.
2. Modified type: This form is similar to the ordinary type, but the course is much faster, and the cutaneous lesions are smaller.
3. Variola sine eruptione: A fever is present, but there is no rash. This form is seen in vaccinated persons or those who have been infected before.
4. Flat type: The rash is pustular, either confluent or semiconfluent. This type was more common in children, and was commonly fatal.
5. Hemorrhagic type: Skin lesions and mucous membranes become hemorrhagic, and lead to heart failure, bleeding and bone marrow suppression. Can be rapidly fatal within 3 - 4 days.

Medical Management

Droplet and airborne precautions should be in place for approximately 16-17 days following exposure for all contacts. Patients are still infectious until all the open wounds completely scab over. Treatment is mainly supportive. Immediate vaccination should be undertaken for all those exposed. An immune globulin is available for post-exposure prophylaxis and should be given if within the first week following exposure.

Bibliography

1. NBC Domestic Preparedness Training - Hospital Provider Course Manual. Office of the Surgeon General, U.S. Army: 67-74.
2. Harrison TL, et al: *Principles of Internal Medicine*, ed 12. New York, NY: McGraw-Hill, 1991: 709-711.
3. Medical Management of Biological Casualties Handbook. United States Army. 1998

Call the Florida Poison Information Center Network for information and/or to report exposures.



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Centers are located in Jacksonville, Tampa, & Miami