

**Topic: Smallpox**  
**Class: B.Sc Part –III (Hons.)**  
**Paper- VII**  
**Group – A**

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# Diagnosis

- Polymerase chain reaction (PCR)
- Electron microscopy
- Unless laboratory exposure is documented or an outbreak (due to bioterrorism) is suspected,
- only patients that fit the clinical case definition for smallpox should be tested because of the risk that test results may be falsely positive.
- An algorithm for evaluating the risk of smallpox in patients with fever

- Diagnosis of smallpox is confirmed by documenting the presence of variola DNA by PCR of vesicular or pustular samples.
- The virus can be identified by electron microscopy or viral culture of material scraped from skin lesions and subsequently confirmed by PCR.
- Suspected smallpox must be reported immediately to local public health agencies or the CDC at 770-488-7100.
- These agencies then arrange for testing in a laboratory with high-level containment capability (biosafety level 4).
- Point-of-care antigen detection assays are being developed.

# Treatment

- Supportive care
- Isolation
- Possibly tecovirimat, consider cidofovir or brincidofovir (CMX 001)
- Treatment of smallpox is generally supportive, with antibiotics for secondary bacterial infections.
- The antiviral drug tecovirimat was approved by the FDA in 2018 based on experimental studies and is the first drug to be licensed for the treatment of smallpox

- Although its effectiveness against smallpox in humans is unknown, tecovirimat would likely be the drug of choice for attempted treatment and is available in the US Department of
- Health and Human Services Strategic National Stockpile. Cidofovir and the investigational drug brincidofovir (CMX001) also may be considered .

- Isolation of people with smallpox is essential.
- In limited outbreaks, patients may be isolated in a hospital in a negative-pressure room equipped with high-efficiency particulate (HEPA) filters.
- In mass outbreaks, home isolation may be required.
- Contacts should be placed under surveillance, typically with daily temperature measurement;
- if they develop a temperature of  $> 38^{\circ}$  C or other sign of illness, they should be isolated at home.