

Newsletter

MONKEYPOX

Compiled by: Prof. E. Vardas Lancet Laboratories South Africa

Monkeypox virus is an enveloped double-strain DNA virus of the Poxviridae family. Orthopoxvirus genus. There are 2 distinct genetic clades, called the Central Africa and West African clades, depending on where they are originally described. The Central African clade causes more severe diseases. Various animal species are the natural hosts of this virus, mainly rodents, tree squirrels and some non-human primates.

The incubation period ranges from 5- 21 days. Initially the infection (lasting from 0-5 days) is characterized by fever and Lymphadenopathy. The rash or skin eruptions usually occurs 1-3 days after the onset of fever, affecting mainly the face, palms of the hands, soles of the feet, oral mucosa, genitalia and sometimes the conjunctivae.

The rash is initially maculopapular, then evolves into vesicles and thereafter into pustules which crust over with umbilication and finally desquamation and scarring. In contrast to chickenpox (VZV), the rash of Monkeypox is not painful or itchy and all lesions are in the same stage of evolution.



Papule



Vesicle



Pustule/Ulcer



Scarring

Figure 1. Evolution of the Monkeypox rash

Monkeypox is a self-limiting disease resolving in 2-4 weeks with a low case fatality ratio ranging from 0-11%.

Severe disease can occur in young children and those with underlying immune deficiencies from any cause. Vaccination with smallpox vaccine will not have this protection.

Transmission

The current outbreak is extraordinary because the first reports were from the UK on 7 May 2022, and to date there have been more than 100 confirmed cases from 15 different countries where there is no endemic transmission of the virus in animals. Reported cases have no established travel links to endemic areas and based on current information cases have mainly, but not exclusively been identified amongst men who have sex with men. The clade identified in these cases is the less severe West African clade.

Monkeypox virus can be transmitted to a person upon contact with the virus from an animal, human, or materials contaminated with the virus. Person-to-person transmission of the virus is through close contact (i.e. prolonged face to face contact, kissing). Entry of the virus is through broken skin, respiratory tract, or the mucous membranes (eyes, nose, or mouth). In the current outbreak, cases of possible transmission through sexual contact have been noted, but are not confirmed.

WHO case definitions for the current outbreak in non-endemic countries

Suspected case

- A person of the any age presenting with an unexpected rash with one or more of the following signs or symptoms since 15 March 2022:

One of the following:

- Headache
- Fever
- Lymphadenopathy
- Myalgia
- Weakness
- Backpain
- For which the common causes of the acute rash, do not explain the clinical picture, including: Varicella Zoster, Measles, Zika, Dengue, Chikungunya, herpes simplex, primary or secondary Syphilis, Chancroid, LGV, Molluscum Contagiosum, Bacterial skin infections, disseminated Cryptococcosis and allergic reactions.

AND

One of the following:

- An epidemiological link (direct physical contact with a confirmed case of Monkeypox
- Travel history to a Monkeypox endemic area in the last 21 days
- Multiple anonymous sexual partners in the last 21 days
- Has a positive Orthopoxvirus serology result in the absence of the previous smallpox vaccination

How is Monkeypox diagnosed in the laboratory and what type of specimens are required?

Currently offer PCR testing and Electron microscopy for investigation of acute suspected monkeypox cases.

Monkeypox has two disease phases and different specimens can be collected in each phase:

- During the prodromal phase specimens to be collected include tonsillar tissue swab with a sterile dry swap, nasopharyngeal swab, acute (yellow-top SST tube) and whole blood (purple-top EDTA tube).
- During the rash/lesion phase specimens include lesion biopsy, fluid, swab or crust, acute serum (yellow-top SST tube) and whole blood (purple-top EDTA tube). More than one lesion should be sampled, preferably from different locations on the body and/or from different looking lesions.

Clinical Management and Infection Prevention and Control in Healthcare Settings

Universal contact and droplet precautions, including hand hygiene, appropriate handling of contaminated laundry and waste and standard surface disinfection should be applied in any facility for outpatient services and all hospitals. If aerosol generating procedures (aspiration of the respiratory tract, bronchoscopy, intubation, CPR) are performed, then standard N95 respirators should be used. A person is contagious from the onset of the rash until all scabs have fallen off.

Treatment is supportive as no specific treatments for Monkeypox are currently available. The antiviral tecovirimat, which is approved in the US for *Orthopoxvirus*-related disease, is not freely available at present. Cidofovir & Brincidofovir may be considered, as both have proven activity against *poxviruses* in animal and in-vitro studies. Administration of smallpox vaccine can be considered, as both have proven activity against Poxviruses in animal and in-vitro studies. Administration of smallpox vaccine can be considered for infected individuals and their potential contacts ("ring vaccination" or "cordon sanitaire"). Mass immunization is not indicated. If a person is contagious from the onset of the rash/lesions through the scab stage. Once all scabs have fallen off, a person is no longer contagious.

References:


1. World Health Organization. Monkeypox, [Accessed 29 June 2022.] Available at: <https://www.who.int/news-room/fact-sheets/detail/monkeypox> [Accessed 29 June 2022]
2. World Health Organization *Monkeypox Multi-country Monkeypox outbreak in non-endemic countries* [Accessed 29 June 2022.] Available at: [Multi-country monkeypox outbreak in non-endemic countries \(who.int\)](https://www.who.int/news-room/fact-sheets/detail/monkeypox) [Accessed 29 June 2022]
3. Centers for Disease Control and Prevention. Monkeypox-Information for Clinicians. Available at: [Multi-country monkeypox outbreak in non-endemic countries \(who.int\)](https://www.cdc.gov/media/releases/2022/s0622-monkeypox.html) [Accessed 29 June 2022]
4. National Institute of Communicable Disease. Monkeypox. Available at: <https://www.nicd.ac.za/diseases-a-z-index/monkeypox/> [Accessed 29 June 2022]

Cooper Centre, Sozisa Road | Mbabane | Eswatini |

Tel: +268 240 42368

Email: swaziclientservices@lancet.co.sz

@lanceteswatini

 Lancet Laboratories Eswatini