World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(REVIEW ARTICLE)

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Monkeypox virus (MPXV)

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World Journal of Advanced Research and Reviews, 2022, 15(02), 275–278

Publication history: Received on 04 July 2022; revised on 07 August 2022; accepted on 09 August 2022

Article DOI: https://doi.org/10.30574/wjarr.2022.15.2.0806

Abstract

Monkeypox (MPXV) is a zoonosis with a double-origin DNA (DNA), caused by monkeypox virus, an orthopox virus and close relative of variola virus (smallpox). It was first reported in central Africa in 1970 and has historically affected some of the poorest and most marginalized communities in the world. The clinical syndrome is characterized by fever, rash, and lymphadenopathy. Complications of monkeypox can include pneumonitis, encephalitis, sight-threatening keratitis, and secondary bacterial infections [1].

Keywords: Monkeypox; Virus; Zoonosis

1. Introduction

1.1. History of Monkeypox

Monkeypox virus was first reported in 1959 as an outbreak of a pox-like disease in monkeys kept at a research institute in Copenhagen, Denmark. The first human MPXV case in medical history was recognized when, on 1 September 1970, a nine-month-old child was admitted to the Basankusu Hospital in the Democratic republic of Congo (at that time, known as the Republic of the Congo). Six cases of human MPXV were described in Liberia, Nigeria, and Sierra Leone between Octobers 1970 and May 1971. The first index MPXV case in Nigeria was recorded in 1971, and 10 MPXV cases were reported between 1971 and 1978. Since then, several thousand human cases of monkey pox have been confirmed in 15 different countries, with 11 of them in African countries. Monkeypox was imported to the United Kingdom, the USA, Israel, and Singapore [2].

The U.S. Centers for Disease Control and Prevention (CDC) has recommended that people investigating monkeypox outbreaks involved in the care of infected individuals or animals should take smallpox grafts to protect against monkeypox, and those who have been in close or intimate contact with confirmed monkeypox individuals or animals should also be vaccinated [3].

1.2. Signs and symptoms of monkeypox

Monkeypox symptoms are similar to smallpox symptoms, but milder; and monkeypox is rarely fatal. MPXV is not related to chickenpox.

Signs and symptoms can include:

- Fever
- Headache

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- Muscle aches and backache
- Swollen lymph nodes
- Chills
- Exhaustion

A rash that can look like pimples or blisters that appears on the face, inside the mouth, and on other parts of the body, like the hands, feet, chest, genitals, or anus (figures 1& 2).

The rash goes through different stages before healing completely. The illness typically lasts 2-4 weeks. Sometimes, people get a rash first, followed by other symptoms. Others only experience a rash [4].

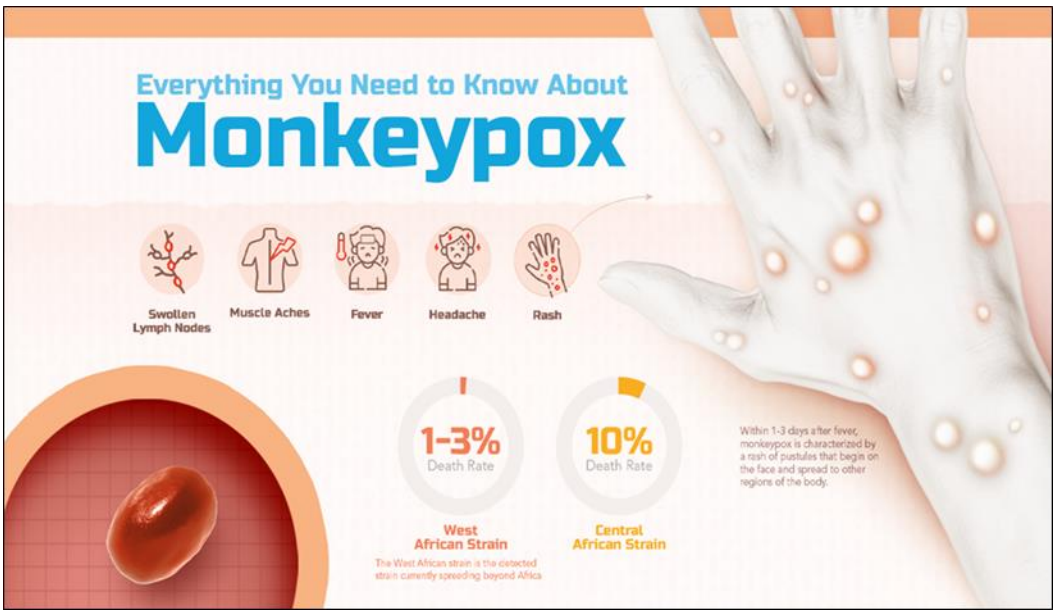

Figure 1 Signs and symptom of monkeypox

Figure 2 Pimples and blisters of rash

1.3. Transmission of monkeypox

The MPXV can transmitted from animal to human and from human to human. Infection from animal to human may occur through an animal bite or direct contact with the fluids of an infected animal's body, while infection from one human to another may occur by breathing spray or contact with infection tools (tangible surfaces) of the body fluids of the infected person. The incubation period ranges from 10 to 14 days [5].

1.4. Outbreak of monkeypox

Monkeypox infections spread in Spain in May 2022, with some 80 confirmed infections, 11 cases in Britain and 50 other cases under testing and verification in 11 other countries. Spanish authorities have suggested that gay pride parties in the Canaria Islands, where some 80,000 people participated, could be another hotbed of MPXV infection, and who said

there was no MPXV vaccine available even though previous smallpox vaccinations had proven to be of high efficacy. Also in the prevention of MPXV [6].

1.5. Prevention of monkeypox

1.5.1. Prevention Steps

Image so hand washing.

Take the following steps to prevent getting monkeypox:

- Avoid close, skin-to-skin contact with people who have a rash that looks like monkeypox.
- Do not touch the rash or scabs of a person with monkeypox.
- Do not kiss, hug, cuddle or have sex with someone with monkeypox.
- Do not share eating utensils or cups with a person with monkeypox.
- Do not handle or touch the bedding, towels, or clothing of a person with MPXV.
- Wash your hands often with soap and water or use an alcohol-based hand sanitizer (figure 3).

Figure 3 Hand washing

In Central and West Africa, avoid contact with animals that can spread MPXV, usually rodents and primates. Also, avoid sick or dead animals, as well as bedding or other materials they have touched.

1.5.2. If you are sick with MPXV

Isolate at home

If you have an active rash or other symptoms, stay in a separate room or area away from people or pets you live with, when possible [7].

Assumes that smallpox vaccination provides protection against human monkey smallpox infection, as viruses closely related to each other and protects animals from the challenge of deadly experimental MPXV. This has not been conclusively proven to humans because routine smallpox vaccination has been suspended after smallpox was clearly eliminated due to safety concerns. Smallpox vaccine has been shown to reduce the risk of MPXV among people previously vaccinated in Africa, and reduced immunity to smallpox viruses in vulnerable groups is a factor in the spread of MPXV. This is due to diminished preventive immunity among people vaccinated before 1980, when mass smallpox vaccinations stopped in vulnerable groups is a factor in the spread of MPXV [8]. The Centers for Disease Control and Prevention (CDC) does not recommend pre-infection vaccinations for non-disease veterinarians, veterinary staff or animal control officers unless they participate in field investigations [9]. Teachers are the main caregivers and the first line of protection for school children. Their role complements that of parents. During school hours, school teachers are actually the first-respondent in cases of disasters or emergencies. They must be able to deal properly with health emergencies both in normal children, and those children with special health care needs [10].

1.6. Treatment of monkeypox

There are no treatments specifically for MPXV infections. However, monkeypox and smallpox viruses are genetically similar, which means that antiviral drugs and vaccines developed to protect against smallpox may be used to prevent and treat monkeypox virus infection. Antivirals, such as tecovirimat (TPOXX), may be recommended for people who are more likely to get severely ill, like patients with weakened immune systems [9].

2. Conclusion

People must prevent better than cure and follow all health instructions so that we can protect ourselves from infectious diseases and protect our families

Compliance with ethical standards

Acknowledgments

I thank the University of Basra and the College of Nursing in particular for helping me complete the work

Statement of informed consent

The present research work does not contain any studies performed on animals/humans' subjects by any of the authors.

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