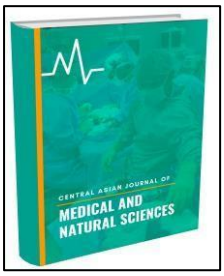

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*Article*

# Diagnosis and Treatment of Monkeypox Patients a Review

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**Abstract:** A viral disease that affects children and young adults, it begins gradually and the infection may be mild. The infection turns into an acute stage in a high percentage of patients. The disease develops in the acute stage to encephalitis, myocarditis or pneumonia, and eye problems in severe cases.Monkeypox virus infection is a major public health problem worldwide. The country bears the largest burden in the world in terms of monkeypox infection and will be a major contributor to the elimination of this disease globally. The country has made good progress in reducing monkeypox virus infection in previous years, Iraq still faces challenges in achieving its goal of reducing the mortality and morbidity rate of monkeypox at present. Based on the objectives of the WHO global health sector strategy on monkeypox, we highlight other priorities for action to eliminate this virus in Iraq to achieve the impact goal of reducing mortality, and we suggest prioritizing service coverage targets for diagnosis and treatment. First, there is a need to improve the diagnostic and treatment capacities of medical institutions and health workers. Second, the government needs to reduce the financial burden of health care on patients. Third, there is a need for better coordination across existing national programs and resources to establish an integrated prevention and control system that covers prevention, screening, diagnosis and treatment of HIV infection and monkeypox across the life cycle. In this way, progress can be made towards the goal of eliminating monkeypox in Iraq.

**Keywords:** Mpox, Health problem, Infection, Diagnosis and treatment.

## 1. Introduction

Monkeypox was first discovered in 1958, when an outbreak of a smallpox-like disease occurred in colonies of monkeys kept for research. Monkeypox is a rare viral disease, and the virus that causes the disease belongs to the Orthopoxvirus family of the Poxviridae family, which also includes the Variola virus. Monkeypox, abbreviated as Mpox, is a disease Caused by the smallpox virus, a viral infection that can spread from person to person mainly through direct contact and sometimes from the environment to people via objects and surfaces touched by a person with monkeypox [1]. Monkeypox is primarily characterized by a generalized rash with skin lesions. The rash is contagious and the skin lesions often begin on the face before spreading to other parts of the body [2]. It causes a range of signs and symptoms and while some people experience less severe symptoms, others may develop more severe disease. Severe disease caused by Mpox may include larger and more widespread lesions, particularly in the mouth, eyes, and genitals, and secondary bacterial infections of the skin or blood and lungs [3]. The virus is transmitted back and forth from humans to animals in a variety of environments. People with confirmed or suspected Mpox infection should avoid close physical contact with animals,

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including pets [4]. Complications of monkeypox infection can include deep scarring of the face, arms, or legs, loss of vision, and in rare cases, death [5]. People who belong To a group at increased risk of monkeypox infection Vaccines are one tool in our toolkit to protect communities from Mpox and should be used in conjunction with other public health and social measures [6].

**Etiology**

Monkeypox is transmitted from animals to humans: exposure to a bite or scratch from an infected animal, eating meat or wild birds that are cooked to be eaten, using products made from infected animals such as hides and fur, and direct exposure to the rash or body fluids of an infected anima l [7].

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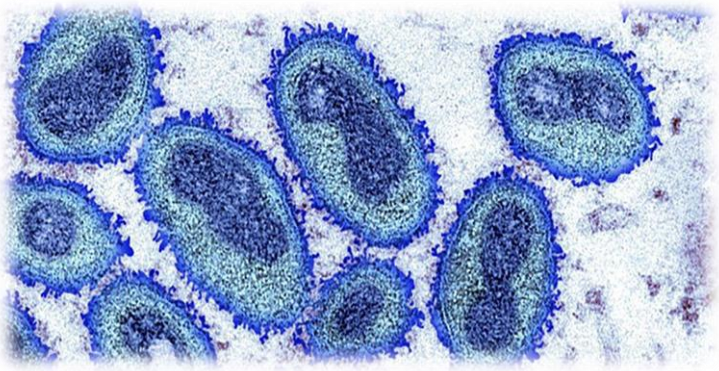

**Figure 1.** Shows monkeypox virus.

**Figure 2.** Shows the tick that transmits monkeypox virus.

**Incubation period**

Symptoms of monkeypox may begin to appear within a period ranging from (3) to (17) Days after exposure to the virus. The period between exposure to the virus and the appearance of symptoms is called the virus's incubation period. Symptoms of monkeypox last for a period ranging from two to four weeks [8].

**Infectious agent**

Monkeypox is caused by a virus of the same name (monkeypox virus), which is related to smallpox and causes a similar, but usually milder, disease. Monkeypox is caused by the monkeypox virus, which is related to smallpox. A rash is the most noticeable symptom [9].

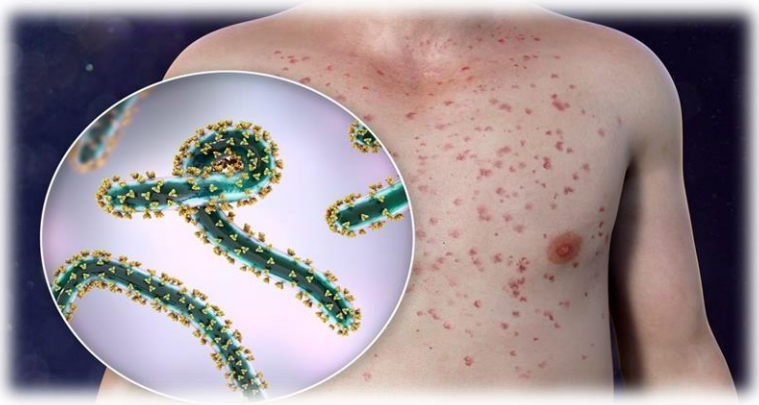

**Figure 3.** Shows the skin rash of a person infected with monkeypox virus.

**Symptoms and signs**

Monkeypox can cause a range of signs and symptoms. While some people experience less severe symptoms, others may become more seriously ill and need care in a health facility.

Common symptoms of monkeypox include a rash that may last for 2-4 weeks. It may start with fever, headache, muscle aches, back pain, weakness, and swollen glands (lymph nodes). The rash looks like blisters or sores and may affect the face, palms of the hands, soles of the feet, groin, and genital areas. These lesions can also appear In the mouth, rectum, vagina, or eyes. The number of sores can range from one to several thousand. Some people develop inflammation inside the rectum (proctitis) which can be very painful, as well as inflammation of the genitals which can cause difficulty urinating [10].

In most In these cases, monkeypox symptoms go away on their own within a few weeks with supportive care such as pain or fever medications. However, in some people, the disease can be severe or lead to complications and even death. Newborns, children, pregnant women, and people with underlying immune deficiencies such as advanced HIV disease (AIDS) may be at higher risk for more severe monkeypox disease and death [11]. Severe disease caused by monkeypox may include larger and more widespread lesions (particularly in the mouth, eyes, and genitals), secondary bacterial infections of the skin, or infections of the blood andlungs [11].

The rash usually first appears on the face, hands, or feet, and then spreads to other parts of the body. However, in cases associated with the outbreak that began in 2022, the rash often began in the genital area, mouth, or throat. The rash caused by monkeypox goes through several stages. It first appears as flat spots that turn into blisters. Then the blisters fill with pus and then form crusts and disappear within two to four weeks. Monkeypox infection remains contagious throughout the period of symptoms, meaning the period from the onset of symptoms until the rash and crusts disappear. Monkeypox can be transmitted to humans through physical contact with an infected person or physical contact with contaminated materials or infected animals [11].

## 2. Materials and Methods

**How is monkeypox transmitted**

From animals to humans The infection can also be transmitted to a person who comes into contact with an infected animal, such as some species of monkeys and wild rodents

(e.g., tree squirrels). This physical contact with an animal or animal meat can occur through bites or scratches or during activities such as hunting, skinning, trapping, or baiting. preparation. It is also possible to acquire the virus by eating contaminated meat that has not been thoroughly cooked [12].

From humans to animals, including many animal species known to be susceptible for centuries, some of whom transmit the disease again to different animals in different environments. People with confirmed or suspected smallpox infection should avoid close physical contact with animals, including pets (such as cats, dogs, hamsters, gerbils, etc.), livestock, and wild animals [12].

**Figure 4.** Shows the skin rash of a person infected with monkeypox virus and the disease transmission medium.

**Complications of monkeypox**

Complications of monkeypox can include severe bacterial infections in the skin lesions that affect the brain (encephalitis), heart (myocarditis), or lungs (pneumonia), and eye problems. People with severe monkeypox may need hospitalization, supportive care, and antiviral medications to reduce the severity of the lesions and shorten the recovery time.. Complications of monkeypox can include:

Deep scars on the face, arms, or legs..

Vision loss.

Other infections.

Death, in rare cases.

The type of monkeypox virus that appeared in 2022 (called Clade II) is rarely fatal [13].

## 3. Results

Monkeypox can be difficult to detect because there are other infections and conditions that can mimic it. It is important to distinguish monkeypox from chickenpox, measles, bacterial skin infections, scabies, herpes, syphilis, other sexually transmitted diseases, and drug allergiesA person with monkeypox may have other sexually transmitted diseases such as syphilis or herpes at the same time. Conversely, a child suspected of having monkeypox may also have chickenpox. For these reasons, diagnostic tests are essential to enable people to get care as quickly as possible and prevent severe illness and its spread [14].

The best laboratory test for monkeypox is RNA detection by polymerase chain reaction. The best diagnostic samples are taken directly from the rash, fluid, or crusts, and are collected in a controlled swab process. In the absence of skin lesions, diagnostic tests

can be performed using swabs taken from the mouth, pharynx, anus, or rectum. Blood tests are not recommended, and antibody detection methods may not be useful because they do not distinguish between different strains of smallpox virus [14].


**Figure 5.** Shows test samples taken from a person infected with monkeypox virus.

HIV testing should be available to monkeypox-infected adults and children as appropriate, and diagnostic testing for other conditions such as varicella zoster virus, syphilis, and herpes should be considered where possible [14].

## 4. Discussion

Patients with a rash should be evaluated to rule out other associated conditions such as chickenpox, chickenpox, scabies, syphilis, skin allergies, and drug allergies. In addition, swollen lymph nodes are an indication that the patient may have monkeypox rather than smallpox or chickenpox. The The doctor may also perform some laboratory tests and analyses to confirm the type of virus causing the disease, including: polymerase chain reaction (PCR) and enzyme-linked immunosorbent assay (ELISA) [15].

**Monkeypox: Treatment of**

Years of research into smallpox treatments have led to the development of products that may also be useful in treating monkeypox.. In January 2022, the European Medicines Agency approved the use of an antiviral drug developed for smallpox (Tecovirimat) (TPOXX) or brincidofovir (Tembexa) for the treatment of monkeypox under exceptional circumstances. Trials of these treatments in the context of monkeypox outbreaks are increasing but still limited.. For this reason, their use is usually accompanied by participation in a clinical trial or an expanded access protocol that is accompanied by the collection of information that will improve knowledge about how best to use them in the future [15].

**New drugs used in the treatment**

Some smallpox vaccines may help prevent monkeypox, such as ACAM2000 and Genius. These vaccines can be used to prevent monkeypox. because the virus that causes it is closely related to smallpox [14]. For people who are not expected to respond to smallpox vaccine, their doctor may offer immunoglobulin, which contains antibodies from people who have received smallpox vaccine. WHO currently recommends use either MVA-BN or LC16, or ACAM2000 when the other two vaccines are not available [14].


**Figure 6.** Shows the monkeypox vaccine.

**Period of communicability**

Most people infected with monkeypox suffer from a mild illness and recover within a few weeks. The period of onset of symptoms can be shortened to a few days or can begin to extend to (21) days [14].

**Protection**

Vaccination should only be considered for people at risk of infection (such as close contacts of a person with monkeypox, or people in high-risk groups for monkeypox infection). Mass vaccination is not currently recommended, and at-risk travelers may also wish to be vaccinated based on an individual risk assessment by their healthcare provider [13].

If you are at risk of exposure to monkeypox due to ongoing outbreaks in your community, talk to your healthcare provider about vaccine options. WHO currently recommends that vaccines be available to people who have been in close contact with a person with monkeypox or to people in a high-risk group for monkeypox infection. Vaccines are one tool in our toolkit to protect communities from monkeypox and should be used in conjunction with other public health and social measures [13].

Monkeypox vaccines provide some level of protection against infection and severe disease. After vaccination, continue to be careful to avoid getting monkeypox and passing it on to others because it takes several weeks for immunity to develop after vaccination and because a small number of people may not respond to vaccination. For those who do get monkeypox after vaccination, the vaccine protects them from getting severe disease and needing hospitalcare [15].

## 5. Conclusion

Monkeypox is treated with some vaccines, the type and dose of which are determined by the doctor according to the person's age and condition, the severity of the infection, and the period of exposure to the infection. After receiving the vaccination, continue to be careful to avoid getting infected with monkeypox and transmitting it to others because developing immunity after vaccination takes several weeks and because a few people may not respond to the vaccination.

**Recommendations**

When symptoms appear on a person, he should be shown to a doctor immediately for diagnosis and not share injections and needles with others, not share clothes, sheets, or toothbrushes with anyone, inform the infected pregnant woman to the doctor about the fact that she is carrying the monkeypox virus, conduct the necessary tests during

pregnancy, and finally, people who have been diagnosed with monkeypox can prevent the transmission of the infection from them to others..

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