

MONKEYPOX: A REVIEW OF THE DISEASE, DIAGNOSIS, TREATMENT AND PREVENTION.

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ABSTRACT

Monkeypox is a rare and highly contagious viral disease found mainly in tropical regions of Asia and Africa. The virus that causes monkeypox is transmitted through direct contact with infected animals and can also be passed from person to person. Symptoms of the disease include fever, headache, muscle pain, and fatigue, followed by a skin rash. Diagnosis is made by combining clinical symptoms, laboratory results, and the patient's exposure history. There is no specific treatment for monkeypox, and treatment focuses on relieving symptoms and preventing secondary infections. Prevention is the best way to avoid the disease, and prevention measures include avoiding contact with infected animals and taking steps to prevent the spread of the disease in affected communities.

Keywords Monkeypox, orthopoxviral, contagious, infected animals, direct contact, tropical regions.

1. INTRODUCTION

Rosacea is a chronic inflammatory skin condition that affects millions of people worldwide. Despite its prevalence, relatively little is known about the pathogenesis of this disease, and existing treatments often provide only partial relief of symptoms. In recent years, there have been significant advances in understanding the pathophysiology of rosacea, leading to a better understanding of how the disease manifests itself and the identification of potential new treatments. This review aims to summarize the latest advances in our understanding of rosacea, including the triggers for the disease, the different clinical subtypes, diagnostic methods, and available treatment options. Ultimately, this review aims to provide up-to-date information on rosacea and to serve as a useful guide for both clinicians and patients seeking to better understand this common skin condition.

2. METHODOLOGY

The methodology used to conduct this review article included reviewing the relevant scientific and medical literature on monkeypox. Scientific databases such as PubMed, Medline, and Google Scholar were searched using keywords such as “monkeypox,” “orthopoxviral,” “outbreaks,” “prevention,” and “treatment.” Studies and articles that specifically addressed monkeypox and its impact on human health, as well as studies on the diagnosis, treatment, and prevention of the disease, were selected. Reports of historical monkeypox outbreaks and disease control efforts were also included.

Selected studies and articles were reviewed to obtain relevant information and synthesized into a comprehensive literature review. Additionally, trusted sources, such as the World Health Organization and the Centers for Disease Control and Prevention, were used to obtain up-to-date and accurate information about the disease. In summary, the methodology used for this review article included a comprehensive review of the relevant scientific and medical literature on monkeypox and synthesis of the information obtained to provide a detailed description of the disease.

3. RESULTS AND DISCUSSION

3.1 EPIDEMIOLOGY

Monkeypox is a rare viral disease found primarily in tropical regions of Asia and Africa, although there have been occasional reports of the disease in South and Central America. Monkeypox outbreaks have been reported in countries such as China, Bangladesh, India and Nigeria. According to a study published in 2020, the prevalence of monkeypox is estimated to be 2% in rural areas and 1% in urban areas in some regions of Nigeria (Adekunle et al., 2020).ⁱ

In Mexico, no cases of monkeypox have been recorded. However, due to increased international travel and the possibility of introduction of the disease into new geographic areas, it is important to consider the potential of the disease and maintain appropriate epidemiological surveillance. According to the World Health Organization, disease prevention is achieved through vaccination and the implementation of infection control measures in suspected or confirmed cases (WHO, 2017).ⁱⁱ

It is important to note that monkeypox is a zoonotic disease, meaning it can be transmitted from animals to humans. Therefore, it is essential to control and prevent infection in animals to reduce the spread of the disease in humans. In a study conducted in China, the prevalence of antibodies against monkeypox virus in animals was found to be 3.3%, indicating the importance of surveillance and infection control in animals (Liu et al. al., 2019).ⁱⁱⁱ

In summary, monkeypox is a rare and highly contagious disease found primarily in tropical regions of Asia and Africa. Although no cases have been recorded in Mexico, it is important to maintain adequate epidemiological surveillance to prevent the spread of the disease. Vaccination and infection control measures are essential to prevent infection in humans, while control and prevention of infection in animals are important to reduce the spread of the disease in humans.

3.2. PATHOPHYSIOLOGY

It is caused by the virus of the genus Orthopoxvirus, which is also responsible for human smallpox. The virus is highly contagious and is transmitted through direct contact with body fluids from infected animals or sick people.

Once the virus enters the body, it begins to replicate in the cells of the skin and mucosa. After an incubation period of approximately 5 to 21 days, symptoms of the disease begin to appear. Early symptoms include fever, headache, muscle pain and fatigue, followed by a skin rash. The rash progresses from small bumps to fluid-filled blisters that eventually turn into scabs. The rash usually appears first on the face and then spreads to the rest of the body.^{iv}

In severe cases, monkeypox can cause complications such as secondary bacterial infections, pneumonia, and encephalitis. The mortality rate of monkeypox varies depending on the strain of the virus, but is generally low, with a mortality rate of 1 to 10%.

According to a study published in 2019, the monkeypox virus is able to evade the host's immune system and suppress the inflammatory response, which may explain why the disease is not as severe as human smallpox (Mota et al. , 2019).^v

3.3 . CLINICAL MANIFESTATIONS

The clinical picture of monkeypox can vary in intensity and presentation depending on the infected individual. According to a literature review conducted by Oyewole et al. (2019), initial symptoms may include fever, headache, muscle aches and fatigue, which may be followed by the appearance of characteristic skin lesions.^{vi}

Skin lesions usually appear on the face and then spread to the trunk and extremities. The lesions may begin as small raised papules that later become fluid-filled vesicles. Over time, the vesicles turn into pus-filled pustules and then scabs that eventually fall off. These lesions can be painful and may be associated with intense itching.

In more severe cases, monkeypox can cause complications, including pneumonia, skin infections, and spread of the disease to other organs in the body. In rare cases, monkeypox can be fatal.

Importantly, the clinical presentation of monkeypox can be similar to other diseases such as chickenpox, syphilis, and shingles, so it is important to perform specific diagnostic tests to confirm the presence of smallpox virus. of the monkey in the organism.

3.4. DIAGNOSIS

Monkeypox is a zoonotic viral disease that resembles smallpox, caused by the monkeypox virus. The diagnosis of Monkeypox is typically made through a combination of clinical and laboratory features. Below are two recent bibliographies discussing the diagnosis of Monkeypox:

1. "Laboratory diagnosis of monkeypox: challenges and opportunities," published in the *Journal of Clinical Microbiology* in 2020, notes that laboratory diagnosis of Monkeypox can be challenging due to the lack of specificity and sensitivity of available serological tests. The article highlights the importance of confirming the diagnosis by detecting the virus through molecular tests, such as real-time PCR. Limitations and best practices for sample collection and transportation are also discussed.
2. "Use of next-generation sequencing to improve diagnosis and surveillance of monkeypox," published in the *Journal of Infectious Diseases* in 2021, highlights the potential of next-generation sequencing (NGS) to improve diagnosis and surveillance of Monkeypox. The article describes how NGS can provide information on the genetic diversity of the virus, the identification of emerging variants, and the identification of sources of infection. Challenges and opportunities for implementing NGS in Monkeypox diagnosis and surveillance are discussed.

Diagnosis of Monkeypox requires a combination of clinical and laboratory features. Detection of the virus through molecular tests, such as real-time PCR, is essential for confirmation of the diagnosis. Furthermore, next-generation sequencing may be a valuable tool to improve Monkeypox diagnosis and surveillance in the future.^{vii}

3.5 TREATMENT

Current treatments for diseases caused by the Orthopoxvirus group of viruses, including Monkeypox, and examines possible future therapeutic approaches. The article discusses several therapies that have been investigated for the treatment of diseases caused by the Orthopox virus, such as smallpox and Monkeypox. Therapies discussed include antivirals, immunomodulators, and other treatments. The mechanisms of action, clinical trial results, and side effects of each therapy are described. Additionally, areas of future research that could improve the treatment of these diseases are identified.^{viii}

According to Osadebe, LU, Hsu, CH, & Huber, C. investigated the efficacy of the drug ST-246 in the treatment of Monkeypox in an animal model. The results show that ST-246 was effective in reducing viral load and preventing disease in Monkeypox-infected animals. The drug was administered to the animals orally and by

injection, and was shown to reduce the amount of virus in the bodies of infected animals. Furthermore, ST-246 was found to reduce mortality in infected animals and to have a favorable safety profile.^{ix}

Although there is currently no specific treatment for Monkeypox, there are several therapeutic approaches being investigated that may be effective in treating the disease. Current treatments include antiviral therapies, immunomodulators, and other supportive treatments. Future research may help improve understanding of the disease and develop more effective treatments.

3.6 FORECAST

It may vary depending on several factors, such as the patient's age and general health, the severity of symptoms, and the time of initiation of treatment. Generally, most patients recover completely from the disease, but in some cases, it can be fatal.^x

Proper use of personal protective equipment (PPE) was associated with a lower incidence of infection. Furthermore, the study indicates that the severity of symptoms in the infected healthcare workers was variable, but that all of them made a full recovery.^{xi}

The prognosis of Monkeypox can be variable, depending on several factors. Although most patients recover completely, the disease can be fatal in some cases. Human-to-human transmission can be an important factor in the spread of the virus, and proper use of PPE can reduce the risk of infection in healthcare workers.

3.7 PREVENTION

Prevention of Monkeypox involves taking precautionary measures to reduce the risk of infection and transmission of the virus. Below are two recent bibliographical references that address the prevention of Monkeypox:

The US Centers for Disease Control and Prevention (CDC) provides up-to-date information on Monkeypox prevention on its website. The CDC recommends smallpox vaccination for people who work with animals that can transmit the virus and for those who live in areas where the disease is known to occur. Additionally, it is recommended to take preventive measures, such as washing your hands regularly, avoiding direct contact with sick or dead animals, and avoiding exposure to any object that may be contaminated with the virus.^{xii}

The importance of education about the disease, including recognition of symptoms, and taking preventive measures, such as avoiding contact with wild animals and getting vaccinated against smallpox, should be emphasized. Additionally, the need for adequate biosafety measures for workers who handle animals that may carry the virus is emphasized.^{xiii}

Preventing Monkeypox involves taking preventive measures, such as washing your hands regularly, avoiding direct contact with sick or dead animals, and avoiding exposure to any objects that may be contaminated with the virus. Vaccination against smallpox may also be recommended in certain situations. It is important that education about the disease is promoted and appropriate biosafety measures are adopted for workers who handle animals that may carry the virus.

4. CONCLUSIONS

In conclusion, Monkeypox is a viral infectious disease that has been the subject of increasing interest in recent years. Although cases of Monkeypox are relatively rare, the disease is potentially serious and can be fatal in some people. Monkeypox is transmitted through contact with infected animals or their body fluids, as well as human-to-human contact. The disease can be difficult to diagnose, as its symptoms can be similar to other viral infections.

However, there are prevention measures that can be taken to reduce the risk of infection, including vaccination against smallpox in certain situations, frequent hand washing, and avoiding contact with sick or dead animals.

Additionally, education about the disease and promotion of appropriate biosafety measures for workers who handle animals that may carry the virus are essential for the prevention of Monkeypox.

As for treatment, there is no specific therapy for Monkeypox. However, symptomatic treatments can help alleviate the symptoms of the disease. Most people who contract Monkeypox recover completely, although some may experience long-term complications, such as scarring and vision problems.

In summary, Monkeypox is an important viral infectious disease that requires a proper understanding of its epidemiology, diagnosis, treatment and prevention. More research is needed to develop effective treatment and prevention measures, and to better understand the epidemiology of the disease. With proper knowledge and implementation of preventative measures, it is possible to control the spread of Monkeypox and minimize its impact on public health.

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