

Monkeypox; A Disease with an Incurable Pattern

Hiba Hassan

1st Year BDS, Islamabad Medical and Dental College, Islamabad Pakistan

Key points

- Monkeypox by the monkeypox virus (MPXV)
- Monkeypox symptoms in both adults and children
- Vaccines for monkey pox

Monkeypox is a rare viral disease caused by the monkeypox virus (MPXV) that can be transmitted from animals to humans, and from humans to humans. The symptoms include fever, headache, joint pain, myalgia, and nausea that last for about three days. It is like smallpox, but early lymphadenopathy distinguishes it from smallpox. The incubation period ranges from one to three weeks. Control measures include isolation of infected individuals, contact tracing, and vaccination of high-risk groups. These measures are crucial in preventing the spread of the disease and ensuring the health and safety of affected individuals. Monkeypox occurs primarily in remote parts of Central and West Africa, near tropical rainforests. While most people recover within a few weeks, severe cases can occur, particularly in people with weakened immune systems. In rare cases, monkeypox can be fatal, with a mortality rate of around 1-10%.¹

The interest in monkeypox virus has increased largely and monkeypox has been receiving a lot of attention because the clinical presentation of this virus and smallpox is quite alike. The level of extent of similarity is evident by the fact that the vaccination for variola virus (smallpox virus) also provides a high degree of protection against monkeypox virus.²

Symptoms

Monkeypox shows severe symptoms in both adults and children. It typically has three phases: incubation, prodromal, and the eruptive stage. After primary infection, the incubation period is about 13 days. The prodromal phase lasts for about 1 to 4 days and the symptoms are quite clear in this phase. The symptoms include high temperature, headache, fatigue, and often, lymphadenopathy, especially in the cervical and maxillary regions. Lymphadenopathy serves as the identifying feature which differentiates monkeypox and smallpox. The eruptive phase lasts for about 14 to 28 days. In this phase, skin lesions appear in a centrifugal distribution and progress through several stages: macules, papules,

vesicles, and finally, pustules. The lesions are firm and well delimited and display umbilication. The severity of symptoms and the duration of the disease depends upon how dense the skin lesions are. The disease is a lot more severe in children, pregnant women and immunocompromised patients infected with HIV virus.³

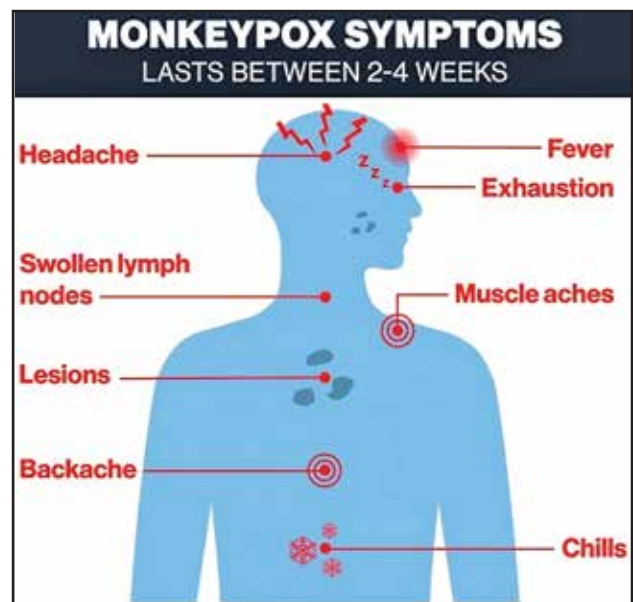


Figure 1; the symptoms of monkeypox expressed pictorially.⁴ (Source: abcnews.go.com)

Pattern of transmission

The recent outbreak of monkeypox has raised concerns due to its unusual epidemiologic characteristics. The number of cases detected outside endemic areas is higher than ever before, and transmission is mostly human-to-human, not linked to travel. Sexual contact has been the predominant pattern of transmission in newly affected countries, with higher rates of infection among those reporting multiple sexual partners. The distribution of lesions is also unusual, frequently in genital, anal, and perianal areas. Monkeypox DNA has been detected in seminal fluid, indicating potential viral shedding and

transmission. It is unclear whether these characteristics reflect changes in virus transmission.³

Treatment and vaccination

The vaccination of smallpox also provides a high degree of defence against monkeypox. However, after the eradication of smallpox, cessation of the smallpox vaccination program in 1980 has led to virtual lowering or losing immunity, thus the risk of human-to-human transmission of MPXV has increased. Currently the vaccines which provide immunity against this virus are, JYNNEOS™ (also known as Imvamune or Imvanex or MVA-BN) and ACAM2000®, and the third one is Aventis Pasteur Smallpox Vaccine (APSV). These vaccines are currently being offered to affected citizens in countries like the United Kingdom (UK) and Spain to control the spread.⁵

References

1. Rizk JG, Lippi G, Henry BM, Forthal DN, Rizk Y. Prevention and treatment of monkeypox. *Drugs*. 2022 Jun; 82(9):957-63.
2. Ježek Z, Fenner F. Human monkeypox. *S. Karger Ag*; 1988.
3. Gessain A, Nakoune E, Yazdanpanah Y. Monkeypox. *New England Journal of Medicine*. 2022 Nov 10; 387(19):1783-93.
4. <https://abcnews.go.com/Health/symptoms-monkeypox-treat/story?id=84907957>
5. Chakraborty S, Mohapatra RK, Chandran D, Alagawany M, Sv P, Islam MA, Chakraborty C, Dhama K. Monkeypox vaccines and vaccination strategies: Current knowledge and advances. An update—Correspondence. *International Journal of Surgery*. 2022 Sep 1; 105:106869.