

Monkeypox an Emerging Threat during COVID-19, Stigmatization and its Status in India: A Review

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Abstract

Human monkeypox is a zoonotic orthopoxvirus disease with a presentation similar to the smallpox. The frequency and geographical spread of human monkeypox cases have increased recently in most countries of world. The disease is endemic in Democratic Republic of the Congo, Central and West Africa, but presently spread to other nations of the world including India that too when the whole world is facing the Covid -19 pandemic. In this article the author focus on the various parameters related to the monkeypox, present status and the stigmatization.

Keywords: Monkeypox, Smallpox, Vaccination, Covid-19 Pandemic, Stigma.

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INTRODUCTION

Monkeypox is a viral disease occurs in humans and other group of animals. The first case was reported from laboratory monkeys in Copenhagen Denmark in 1958 [1]. Whereas the its case in humans was reported in 1970 in six unvaccinated children during the smallpox eradication efforts in the Democratic Republic of the Congo [2] and among others from Liberia, and Sierra Leone. It was observed to be less easily transmissible than smallpox. During 80s and 90s this disease spreads in the DRC, the majority being due to contact with animals, and in 1996 88% of cases resulting from human to human transmission with a death rate in the range of 10% [3]. In humans the disease remained confined to the rain forests of Western and Central Africa until in 2003, when an outbreak of monkeypox occurred in the USA. The disease was found to be mild and no death was reported [3]. This disease was reported in 10 African countries mostly in Central and West Africa between 1970-2019 [2]. In 2018 monkeypox disease cases were diagnosed in the UK in two unrelated travellers from Nigeria [4] and in same year first human to human transmission outside of Africa was confirmed in UK where healthcare worker was infected and later on cases were reported in travellers from Israel and Singapore and UK saw further cases in 2019 and 2021 [5]. In June 2022 World Health Organisation again reported new cases in Africa.

On 23 July 2022 WHO declared the outbreak a public Health Emergency of International concern [6].

Symptoms

It is zoonotic poxvirus infection prevalent in both human and some animals [3]. The human beings are infected without showing any symptoms in the initial stage. But the symptoms begins upto 21 days after infection with early symptoms including headache, muscle pain, fever and fatigue initially resembling influenza [7]. After few days of fever lesions starts appearing on the face before appearing on trunk than elsewhere on the palms of the hands and sole of the feet [8]. Although this disease resembles the smallpox, measles and chickenpox but is distinguished by the presence of swollen glands which may appear behind the ear, below jaws, in the neck or on the groin before the onset of the rashes. The genital and perianal lesions, swollen lymph nodes and pain may also occur [9]. It has been observed that three quarters of the affected people have lesions on the palm and soles and 2/3 people infected with this disease develops lesions in the mouth and third on the genitals and one in five have lesions in the eyes [7]. These lesions begin as small flat spots before becoming small bumps and then are filled with clear fluid and later become yellow fluid, which subsequently burst and scab over and persist for around ten days [10]. After healing the lesions may leave pale marks before becoming dark scars.

Sometimes complications develop in the infected persons who include secondary infection, pneumonia, sepsis, encephalitis and loss of vision with severe eye infection [7]. If infection occurs during pregnancy the birth defects may develop in the infants [11]. It has been observed that the disease may be milder in people vaccinated against the smallpox in childhood [12]. Besides humans the disease has also been reported in dormice, tree squirrel and non-human primates [7]. The signs and symptoms in animals vary among different species and spreads among the animals via fecal oral route, through wounds, eating infected meat, whereas death is more likely in baby monkeys.

Transmission

The virus can be transmitted by an infected animal bite or scratch, by contact with an infected animals bodily fluid or lesion material .It is also transmitted bush meat preparation .The virus enters the body through broken skin ,the respiratory tract or the mucos membrane of the eyes, nose or mouth [3]. The human to human transmission is common. It is airborne disease and can spread by respiratory means or by direct contact with an infected person's bodily fluid [13] or during pregnancy from mother to fetus [14]. Some studies show that transmission can occur during sexual contact [15]. As virus has been isolated from the seminal fluid has raised the possibility of a genital reservoir for monkeypox virus, but it is not known that virus can spread through vaginal fluids [14]. The virus can also spread via fomites or indirect contact with lesion material such as through contaminated bedding even with standard personal protective equipments such as through inhalation. The risk factor includes sharing bed or room or using the same utensils as an infected person. It is not yet known if people without the symptoms of monkeypox can spread the virus [14]. But still research about the transmission of the strain is going on.

Diagnosis

As the symptoms are similar to the chickenpox, measles, bacterial skin infection, scabies, syphilis and medicated associated allergies, but lymphadenopathy during the prodromal stage of illness can be distinguished the monkeypox from other diseases. The diagnosis can be done by Polymerase Chain Reaction (PCR) by testing of sample from skin lesions. PCR blood test is usually inconclusive because the virus remains in the blood only a short time. For better interpretation of the test result, information is required on the date of onset of fever, date of onset of rashes, specimen collection date with the age of the patient.

Treatment

In the United States and European Union tecovirimat is used for the treatment of the monkeypox including several poxviruses. It is recommended tecovirimat or the smallpox treatment brincidofovir as

the first line antiviral treatment, besides supportive care such as antipyretic, fluid balance and oxygenation. Empirical antibiotic therapy or varicellazoster may be recommended [16].

Prevention

It is assumed that vaccination against smallpox protects against the human monkeypox infection, because both virus are closely related. This has not been conclusively demonstrated in human because routine smallpox vaccination was discontinued following the eradication of smallpox [17]. It has been noted that smallpox vaccinated person have less risk of infection of monkeypox in Africa. The decrease in immunity to poxvirus in exposed population is a factor in the prevalence of monkeypox. It is attributed to waning cross protective immunity among those vaccinated before 1980, when mass smallpox vaccination were discontinued and to the gradually increasing proportion of unvaccinated individuals [18]. In certain countries including United States, it has been recommended that persons or health care workers working in the caring centre of infected individuals or animals must be vaccinated with smallpox vaccine in order to protect against monkeypox. Persons who have close intimate contact with individuals or animals confirmed to have monkeypox should also be vaccinated, whereas no such vaccine has been approved for use during the pregnancy [19].

Moreover health care workers dealing with this disease must be provided complete set of Personal Protective Equipment (PEP).Person infected with monkeypox should be isolated preferably in negative air pressure room to keep others safe from possible infection.

Status of Monkeypox in India and Stamatization

As the whole world is still facing the challenge of Covid-19 Pandemic, another viral disease has been reported from Africa in May 2022. Most confirmed cases with travel history reported travel to countries in Europe and North America rather than West and Central Africa, where this disease is endemic. Therefore this is first time that many monkeypox cases and clusters have been reported concurrently in non-endemic and endemic countries in widely desparate geographical areas.

In India it is spreading unchecked and stigma attached to this disease is likely hindering the testing process. The first case of outbreak was reported in May and has now spread to 78 countries with more than 18000 cases according to World Health Organisation issued on July 28 (WHO).

In India the outbreak was it's reported on 14th July 2022 when Kerala's State Health Minister confirmed the first case. India was the tenth country to report monkeypox case in Asia and it's in South Asia.

India has reported 9 case of monkeypox till 8th of August, out 9 cases four are reported from Delhi while five have been reported from Kerala. According to Rajeev Javadevan co-chairman of IMA's national task force on Covid- 19 many more cases are expected in India. This outbreak is like a large tree that is growing underneath the Earth's surface. This cannot be seen over the soil, but is spreading unchecked under the surface .Javadevan further said that chance of super spreader event like in Europe is comparatively small in India, the network is more covert here. According to Ishwar Gilada an infectious disease expert the stigma attached to the name of the disease is acting as a great barrier for people to come forward for testing." The moment a suspect case of monkeypox approaches a doctor they ask the patient have you done any monkey tricks, where did u get this disease from, told Gilada to IANS. The other stinga associated is sexual transmission as is case with other sexually transmitted disease like HIV, gonorrhoea etc. Although 98/ of monkeypox cases to date are seen among gay or bisexual men ,yet it has not been classified as STD. Expert however have also argued that fear of stimatising the disease has set the public health back. Currently Indian Council of Medical Research (ICMR), Viral Research and Diagnostic Laboratories (VRDL) are conducting preliminary test for monkeypox infection. The VDRL conducts RT-PCR test looks for orthopoxvirus, a family of viruses including monkeypox, cowpox, buffalopox and the eradicated smallpox. The samples are simultaneously confirmed via RT-PCR to specifically detect monkeypox virus at the National Institute of Virology (NIV) in Pune. The ICMR meanwhile has issued an open call for monkeypox vaccine development proposal from commercial business to safeguard those most at risk.

CONCLUSION

It is an emerging zoonotic disease caused by monkeypox virus (MPXV), a member of the orthopoxvirus genus with Poxviridae family. The frequency and geographical spread of human monkeypox cases have increased recently in most countries of the world and there are huge gaps in our understanding of the disease emergence, epidemiology and ecology. Presently it is considered a threat pathogen causing a disease of public health importance. Therefore there is an urgent need to focus on building surveillance capacities which will provide valuable information for designing appropriate prevention, preparedness and response activities.

REFERENCES

1. Parker, S., & Buller, R. M. (2013). A review of experimental and natural infections of animals with monkeypox virus between 1958 and 2012. *Future virology*, 8(2), 129-157. doi: 10.2217/fv.12.130.ISSN17460-0794.
2. Bunge, E. M., Hoet, B., Chen, L., Lienert, F., Weidenthaler, H., Baer, L. R., & Steffen, R. (2022). The changing epidemiology of human monkeypox—A potential threat? A systematic review. *PLoS neglected tropical diseases*, 16(2), e0010141.
3. Petersen, B. W., & Damon, I. K. (2020). Smallpox, monkeypox, and other poxvirus infections. In Goldman, Lee, & Schafer A. (eds.). *Goldman-Cecil Medicine*. 26th ed. Philadelphia, PA: Elsevier, 2.
4. Vaughan, A., Aarons, E., Astbury, J., Brooks, T., Chand, M., Flegg, P., ... & Dunning, J. (2020). Human-to-human transmission of monkeypox virus, United Kingdom, October 2018. *Emerging infectious diseases*, 26(4), 782-785. doi: 10.3201/eid2604-191164.
5. Monkeypox. Gov. UK. 24 May 2022. Archeived from the original on 18th May 2022.
6. Grover, N., Revill, J., & Rigby, J. (2020). Monkeypox outbreak constitutes global health emergency - WHO.
7. WHO factsheet - Monkeypox. World Health Organisation. 19 May 2022.
8. Multi- country monkeypox outbreak: situation update. www.who.int.world health organisation. 4 June 2022.
9. Signs and Symptoms of Monkeypox. CDC. 11 May 2015. Archived from the original on 15 Oct. 2017.
10. Monkeypox - United Kingdom of Great Britain and Northern Ireland. Retrieved 28 May 2022.
11. Monkeypox. GoV. UK. 24 May 2022. Retrieved 28th May 2022.
12. Multi- Country monkeypox outbreak in non-endemic countries. World Health Organisation. Retrieved 22 May 2022.
13. Transmission CDC. 11May 2015. Retrieved 20 May 2022.
14. Monkeypox multi - country outbreak - RAPID RISK Assessment. European centre for Disease Prevention and Control.
15. Poxvirus infection (monkeypox and smallpox)- Treatment. algorithim /BMJ Best Practice. Retrieved 2020-05-20.
16. WHO Factsheet - Monkeypox. World Health Organisation. 19 May 2022. Retrieved 28 May 2022.
17. Kantele, A., Chickering, K., Vapalahti, O., & Rimoin, A. W. (2016). Emerging diseases—the monkeypox epidemic in the Democratic Republic of the Congo. *Clinical Microbiology and Infection*, 22(8), 658-659.
18. Khalil, A., Samara, A., O'Brien, P., Morris, E., Draycott, T., Lees, C., & Ladhani, S. (2022). Monkeypox vaccines in pregnancy: lessons must be learned from COVID-19. *The Lancet Global Health*, 10(9), e1230-e1231. Dio: 10 1016/52214-109X(22) 00284-4.