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EDITORIAL

HAVOC CAUSED BY THE HUMAN MONKEYPOX VIRUS (HMPXV): GLOBAL HEALTH EMERGENCY

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Monkeypox virus (MPXV) belongs to the genus Orthopoxvirus (OPXV) of the family Poxviridae and a member of the subfamily Chordopoxvirinae that is transmitted from monkeys to humans.[1] Mild fever, headaches, being tired all the time, shivering, swollen lymph nodes, lymphadenopathy, lesions, and papules all over the body are similar to the symptoms of smallpox, which affects 1-10% of healthy people.[2] On July 23, 2022, an outbreak of non-endemic monkeypox (MPX) sparked worldwide public health concerns.[3] The World Health Organization (WHO) has called for coordinated international action to stop the spread of the disease from species to species. [4,5]

In 2003, more than 70 people from the United States got monkeypox from infected Ghanaian prairie dogs.[5] In the 1970s, there were two major outbreaks of monkeypox, one in the Congo Basin and the other in west-central Africa. [6] In October 2017, there were 146 clinically suspected cases of West African clade-induced MPX in Nigeria, and 42 confirmed cases were directly linked to handling or eating contaminated bushmeat.[7,8] To prepare the world for a global public health alert, infrastructure and diagnostic facilities must be improved immediately. Lack of funding for healthcare innovation and the return of infectious diseases are all signs that these developing countries' healthcare systems are struggling to meet the needs of their growing populations.[9]

In India, COVID-19 infections had hurt the healthcare system and the healthcare workers' mental health very badly as patients with COVID-19 symptoms were rushed to hospitals from all over the country, which showed that healthcare system had flaws, necessitating major changes. [9] As of August 1, 2022, four fatalities from non-endemic countries (2 in Spain, 1 in Brazil, and 1 in India) and 6 from endemic countries had resulted in a total of 10 deaths worldwide. [10] In 2022, there were an alarming 1,000 cases of MPXV in places where the virus wasn't expected. This made people wonder how patients got the virus.

We shall briefly present how the first two MPXV cases were recorded in India in July 2022 and what their genes tell us about them. On July 14, 2022, Case 1 was reported in a 35-year-old male engineer who arrived from the UAE to Kerala. [11] Case 2 was confirmed on July 18, 2022 in a 31-year-old man who arrived from Dubai to Kerala.[12] The transmission, infection, and symptoms of the monkeypox (MPXV) virus are shown in Figure 1. The third case was detected on July 22 in the Malappuram area of Kerala from a 35 year old man who arrived from UAE. Case 4 was found in New Delhi, India, on July 24 from a male patient who had never travelled outside India. Further, two more cases were detected in the Madurai zone on July 28 and August 1, 2022.[13] The three male patients from the United Arab Emirates (UAE) had vesicular rashes on their mouth and lips and lesion on their genitals. The lesions on their genitals were between 0.5 and 0.8 cm in diameter. [13] All cases displayed mild to moderate grade intermittent fever,

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myalgia and lesions on the trunk and upper limb, groins, genitals, and lower limb.

We focused on the timeline of the first two confirmed cases of human monkeypox epidemics reported in India (Figure 2) because they are important to the current situation. The state health minister put together a team of experts from different fields to stop the spread of MPX by getting in touch with and following possible carriers. Other passengers in close contact with the confirmed cases have been isolated and told to watch for any symptoms. [14] Skin lesions from Case 1 and Case 2 patients were used with the CLC Genomic Workbench to get the MPXV genome. The results indicated that the MPXV strain was 99.91% and 99.96% identical to the monkeypox virus strain MPXV USA 2022 FL001 (GenBank accession number ON674051). ON674051). [15] Monkeypox sequences, EPI ISL 13953611 and EPI ISL 13953610 from the A.2 lineage were found from patients in India, as shown by their GenBank accession number. [16] Two MPXV sequences from the 2022 US epidemic, USA 2022 FL001 and USA 2022 VA001, are most similar to a 2021 (ON676707) sequence from a Nigeria-to-Texas travel-related case in lineage A.2. [16] In cases of monkeypox that started in the United Arab Emirates and went to India, the genes showed that the A.2 lineage had spread. [17] Cidofovir, Brincidofovir, and Tecovirimat can all be used to treat MPXV, but each person with varicella needs a customized treatment. [18] The United States currently offers three separate vaccinations against monkeypox and smallpox. JYNNEOSTM is made from a live, weakened vaccinia virus that can't make more copies of itself but can still cause an immune response. [19] Vaccination with LC16M8, which protects nonhuman primates from severe monkeypox, is another way to stop the spread of the pox virus till specific monkeypox vaccine is developed. [20]

To conclude, public health officials must look into this problem and develop real solutions. Screening and isolation protocols can help find and treat diseases as soon as possible. Tracing the disease's contacts, putting people in quarantine, and giving everyone ring vaccine can stop it from spreading. Human monkeypox currently has no known cure or preventive vaccine. From the point of view of the current epidemic, virologists and scientists need to make a vaccine and treatment for the re-emerging monkeypox virus. To stop the MPX epidemic from spreading, it is important to detect it early, and experts worldwide need to work together to reduce the threat the virus poses.

Statement of Data Availability: The datasets included in this study are available upon request from the corresponding author.

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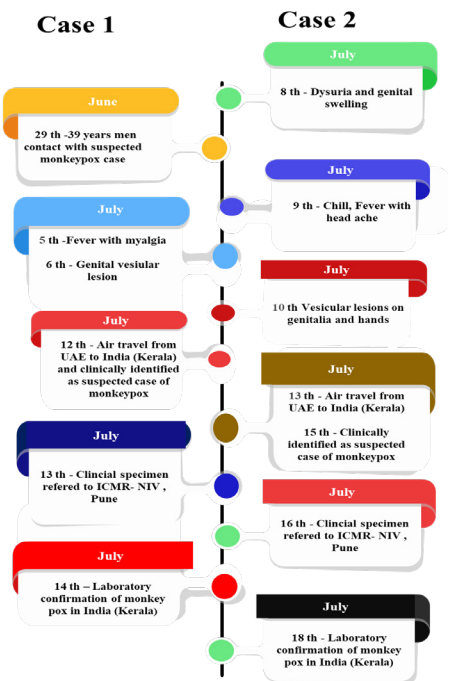

Fig. 2: Timeline of the first two confirmed instances of reported outbreaks of human monkeypox in India

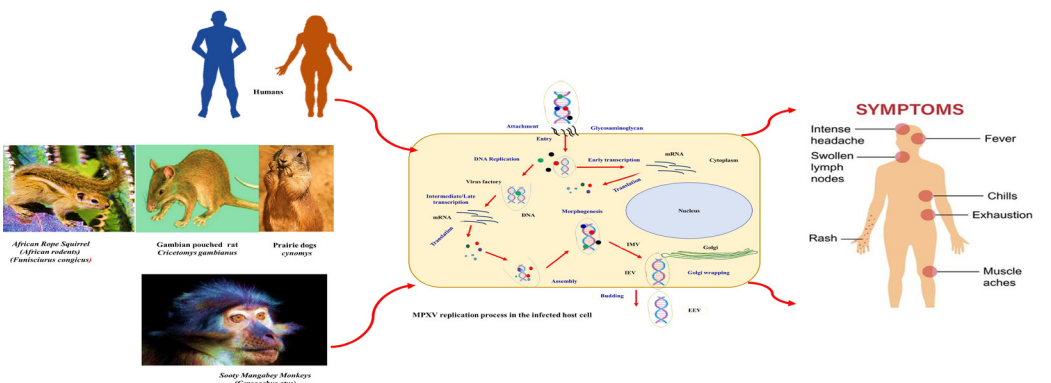

Fig. 1 :Transmission, infection, and clinical manifestations of the monkeypox virus (MPXV) are shown graphically.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
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