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Emerging threat of human monkey pox for India: Requires preparation, not panic

Dear Editor,

The world is continuing its struggle to come out of the COVID-19 pandemic when various emerging and re-emerging diseases are being notified across the globe. Current concern of monkey pox outbreak is extremely high. Europe is currently the global epicentre of the Monkey pox outbreak, reporting more than 80% of confirmed infections worldwide in 2022.¹ The International Health Regulations Emergency Committee on the multi-country outbreak of monkey pox held its second meeting on 21 July 2022. Having considered the views of Committee Members and Advisors likewise as other factors in line with the International Health Regulations (2005), the World Health Organization (WHO) on 23 July 2022 declared the outbreak a public health emergency of international concern (PHEIC).² The rare designation, which is WHO's highest alarm, implies that WHO now views the outbreak as significant enough threat to global health that a coordinated international response is needed. As of 21st October 2022 "Monkey pox Outbreak Global Map, by Centre for Disease Control and Prevention (CDC), USA, 75,348 cases have been confirmed across 109 countries worldwide since out of which 74,457 cases were reported in locations that have not historically reported monkey pox whereas only 891 cases were reported from locations that have historically reported the disease.³ However, the number of weekly reported new cases has decreased by **28% in week 41 (10 Oct - 16 Oct)** compared to **week 40 (03 Oct - 09 Oct)**. The majority of cases reported in the past 4 weeks were notified from the Region of the Americas (88.8%) and the European Region (8.9%).⁴

India reported its first case of Monkey pox on 15th of July 2022 in a 35-year old man from Kerala who arrived from United Arab Emirates (UAE), also the first in WHO South-East Asia Region.⁵ Subsequently; two more cases were reported from Kerala having history of international travel. However, the first confirmed case with no history of international travel was found in Delhi in a 30 year male who attended a stag party in Manali, Himachal Pradesh. India, so far, has reported 71 cases of monkey pox with one death in the southern state of Kerala till 21 October 2022.³ According to ICMR-NIV analysis, all the retrieved monkeypox virus (MPXV) sequences from India covering 90%–99% of the genome belong to the A.2 lineage of virus, detected in US last year, which is different from the B.1 strain causing the outbreak in Europe.⁶

Monkey pox virus has emerged as important orthopoxvirus after the eradication of smallpox in 1980. Fortunately, it is clinically less severe than smallpox.⁷ Monkey pox is transmitted to humans by a bite from an infected animal or direct contact with the animal's lesions, blood, or bodily fluids. During direct and prolonged face-to-face contact, the virus is assumed to be transmitted via respiratory droplets. Monkey pox may also be transmitted by direct contact with an infected person's bodily fluids or virus-contaminated things, like bedding or clothing.⁹ The inoculation or transmission through the placenta (congenital monkey

pox) is another method of transmission of disease.⁸

Monkey pox is usually a self-limiting disease with symptoms lasting from two to four weeks and, although having the potential to spread through aerosol transmission of nasal secretions, isn't as contagious as COVID-19.⁹ The disease essentially spreads through very close, skin-to-skin contact. Because of increased awareness, people are coming to hospitals to substantiate if their symptoms are associated with monkey pox.¹⁰ A recent research have showed that the virus in the outbreak settings is mainly being transmitted through sexual contacts among men who have sex with other men and also in bisexuals with men and women.¹¹

Monkey pox is an emerging zoonotic infection of public health significance.¹² Within the Democratic Republic of Congo, an outsized outbreak occurred in 1996-97. A large outbreak of monkey pox in humans was investigated in Nigeria in 2017.¹³ Monkey pox, having the potential to spread from person to person, may be employed for the purpose of bio-terrorism.¹⁴ The case fatality ratio of Monkey pox has, historically, ranged from 0 to 11% in the general population and has been higher among young children. However, in recent times, the case fatality ratio has been around 3–6%.¹⁵

In the absence of any proven treatment, prevention is currently the sole modality of hope. Practice of universal precautions should be strengthened. Avoid coming in contact with animals suspected to be infected with the virus (including animals that are sick or that are found dead in areas where monkey pox outbreak has occurred), avoid touching any object that have got contact with a sick animal, isolating infected patients from those that might become infected, and after coming into contact with infected animals or humans and washing the hands thoroughly are some of the important measures to contain its spread. JYN-NEOSTM (also called Imvamune or Imvanex) is an attenuated live virus vaccine approved by the U.S. Food and Drug Administration for the prevention of monkey pox.¹³

India is on high risk owing to its huge population, weak healthcare facilities, heavy burden of both communicable and non-communicable diseases and the continuing challenges due to the ongoing COVID-19 pandemic. Increased human-animal contact as a result of climate change and deforestation, bush meat eating, and poor health and research infrastructure, among other factors, may have established an immunological niche for monkey pox virus to re-emerge. Monkey pox isn't any longer restricted to endemic areas. As a result, monkey pox virus could be a dangerous re-emerging disease with a worldwide reach including India. There's currently no effective or safe treatment for monkey pox infection. Continuous surveillance and containment measures along with research on the reservoir, molecular epidemiology, and chemotherapy for monkey pox are the need of the hour to contain this looming epidemic.

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Declaration of competing interest

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