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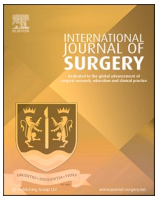

Correspondence

The past, present, and future of a silent multi-country human monkeypox outbreak 2022 – Correspondence

Dear Editor,

During the continuous pandemic with severe acute respiratory syndrome 2 (SARS-CoV-2) virus, a new sylvatic zoonosis virus as human monkeypox emerged beyond the African territories. Human monkeypox virus (MPXV) is an endemic zoonosis disease limited to forested areas of Africa that has been categorized into two distinct clades, including the West African clade and the Congo Basin (Central African) clade. Multiple cases of human monkeypox have been reported from nearly 15 non-African countries after its appearance in May 2022 e.g. Australia, Belgium, Canada, France, Germany, Italy, Netherlands, Portugal, Spain, Sweden, United Kingdom (UK), United States of America (USA), Israel, Switzerland and Austria that are not endemic for this virus [1]. It seems that the epidemiology of this virus has been evolving in the last few years [1,2].

By June 2022, at least 48 cases were reported to the WHO from seven Latin American countries that cause public concerns due to its rapid dissemination in a short time span and the possibility of sexual transmission [majority of cases have vesicular rash illness and in men who have sex with men (MSM), or detection of the virus in sexual fluids] [3]. Similar to COVID-19, travel would be a risk factor for previously reported monkeypox cases. Nevertheless, the recent MPXV cases were not linked with travel to Africa, contradicting previously reported sporadic cases during 2003–2021. Hence, there are remarkable changes in virus behaviors, and epidemiology, especially after weaned cross-protective immunity in the smallpox post-eradication era. After two years of the pandemic with COVID-19, there are 561 million confirmed cases and 6.37 million deaths. A question now arises about whether we are prepared to face MPXV outbreaks.

The clinical presentation of human monkeypox resembles that of smallpox. Conversely, human monkeypox is often self-limiting and less severe than smallpox. The incubation period of disease ranges 6–21 days. There is a skin eruption stage following an invasion period when patients experience back pain, myalgia, intense headache, fever, lymphadenopathy, and intense asthenia [4]. Human monkeypox could be severe in children, pregnant women, and immune-compromised patients. According to the medical literature, the case fatality ratio is estimated to be 3–6% [4,5]; MPXV-infected cases can experience complications e.g. consequential to secondary infections, bronchopneumonia, sepsis, encephalitis, and loss of vision. The presence of DNA Orthopoxvirus has been detected in multiple internal organs including the brain, heart, kidney, liver, lung, skin, spleen, thyroid, and tongue. However, MPXV viremia is short and blood specimens are not suitable for laboratory confirmation [6]. As expected, several countries have ramped up their molecular testing panels with contentious evolution of the SARS-CoV-2 variants. Thus, there is better preparedness against newer emerging diseases, particularly human monkeypox.

The current evidence suggested that human monkeypox to be mostly transmitted from infected rodents to susceptible individuals through direct contact. The natural animal reservoir for this virus has not been identified. However, there are several animals e.g. rope squirrels, tree squirrels, Gambian rats, striped mice, dormice, and primates that are susceptible to this virus. Further research is essential to determine the exact animal reservoir, viral circulation and its evolving epidemiology [7]. Recent reports revealed that human-to-human transmission occurs through close contact with infected individuals and body fluids. Furthermore, hunting infected animals and poorly cooked meat consumption have been shown to associate with viral infections in humans. Nevertheless, there have been reports showing that MPXV mostly affected men who had sex with men (MSM) via lesions in their genital area during close contact, leading to MPXV being circulated within sexual networks. On the other hand, there is no confirmed report of sexual transmission of human monkeypox virus [8]. MPXV is growing rapidly worldwide whereas, there is limited information on its clinical relevance, epidemiology, infection source, and transmission route of this zoonotic virus disease.

Recently, rapid growing human monkeypox detection in patients beyond the African countries has raised a global concern for health services authorities. The overlapping with other endemic communicable diseases in the world such as HIV infection, malaria, tuberculosis, Orthohantavirus, measles, syphilis, Oroya fever, and arboviral diseases has produced a worsening complex scenario, particularly for unvaccinated children [9]. Immense poverty in some developing countries has also influenced this outbreak than in high-income countries. Furthermore, the reemergence of smallpox or chickenpox after vaccination cessation can also lead to misdiagnosing human monkeypox [10]. Smallpox vaccination can provide a meaningful protective immunity against human monkeypox (about 85%). The greatest MPXV outbreak in Nigeria after cessation of smallpox vaccination campaigns affected mostly individuals younger than 40–50 years due to weaned immunity [11]. The Centers for Disease Control (CDC) recommends smallpox vaccination as post-exposure prophylaxis for persons at high-risk of developing monkeypox within 4–14 days of contact. Moreover, several antivirals showing beneficial effects have been approved against human monkeypox [12].

Currently, residents and travelers from the African unions are considered as coming from an endemic area of human monkeypox and they are banned to enter many countries due to the risk of further disease transmission. However, neither vaccines nor drugs for monkeypox are available for individuals who live in many low-income countries. COVID-19 pandemic has a significant impact on the quality of intensive care unit (ICU) capacities, and equipment provisions. Similarly, human monkeypox has the potential to spread from person to person and it can

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be used for bioterrorism goals. The establishment of restrictive laws such as a mandatory 21-day quarantine of cases presenting with vesicular rash facilitate surveillance, registry of diagnosed cases, screening and early diagnosis, education of risk factors contributing to monkeypox transmission, rapid and wide communications of physicians, organizations, and healthcare authorities. The recommendations of the WHO have been considered as key hallmarks in contributing to rapid control of the monkeypox outbreak in 2022. An isolation room with negative pressure is needed for management of an infected person and clinicians and nurses must be educated to wear suitable personal protective equipment. Educating healthcare workers on the geographic origin of suspected cases, clinical aspects and epidemiological features of MPXV is also a crucial step in implementing an efficient local control program to combat the sudden increase in human monkeypox cases during the multi-country outbreak in 2022.

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All the authors of this paper accept full responsibility for the work and/or the conduct of the study, had access to the data, and controlled the decision to publish.

Consent

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Declaration of Competing interest

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