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Letter to the Editor

Global Outbreak of Mpox (Clade Ib): An Emerging Threat to Public Health in Iran

Hassan Karami [1], Fatemeh Ghafoori Ghahdarijani [1], Aida Abbasi [1], Somayeh Yaghoobizad [1], Ali Qaraee Najafabadi [2]

1. *Department of Virology, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran*
2. *Department of Biochemistry, School of Biological Sciences, Tarbiat Modares University, Tehran, Iran*

***Corresponding Author:** Email: Karami.hassan.2022@gmail.com

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Dear Editor-in-Chief

The recent unprecedented increase in the number of cases diagnosed with the rapidly spreading strain [Clade Ib] of the Monkeypox virus [MPXV] within and beyond the African continent has sparked a new public health international concern (1).

MPXV is an orthopoxvirus with two distinct Clades—Clade I [Central African Clade] and Clade II [West African Clade]— including subclades a and b. While the two Clades share similar clinical features, viruses within Clade I appear to be more virulent, have more incubation time, and have the potential to transmit and cause severe clinical outcomes more efficiently than viruses within another Clade—i.e., Clade II (1-3). MPXV spreads through animal bites or scratches and via high-risk activities such as hunting, handling, or consuming contaminated bushmeats. Interhuman transmission is also paramount—especially during the recent outbreaks (Fig. 1) (4).

Iran is a nation with lots of tourist and heritage attractions, making it a major travel destination for an influx of visitors traveling from different countries, especially where the cases of MPXV have recently been diagnosed. Thus, activities like human movement that facilitate the cross-border spread of the virus need to be monitored and controlled. In addition, illegal animal trading/trafficking— most importantly, exotic ones— and their products, if infected/contaminated, increases the risk of virus translocation to areas that had never reported the same disease, leading to the first-ever local outbreak (Fig. 1). For this reason, sustained vigilance must be maintained to ensure timely case identification, isolation, and management of future outbreaks. Attempts to contain the global spread of MPXV and prevent the disease [mpox] from outpacing the national healthcare systems require a robust multi-sectoral collaboration and coordinated response.

The current global situation underscores the necessity of continuous disease surveillance for active monitoring of the disease epidemiological trend [in both animals and humans], early case identification supported by specific screening criteria for initial assessment especially at border checkpoints, contact tracing, and tracking viral evolution when the infectious agent is genetically analyzed.

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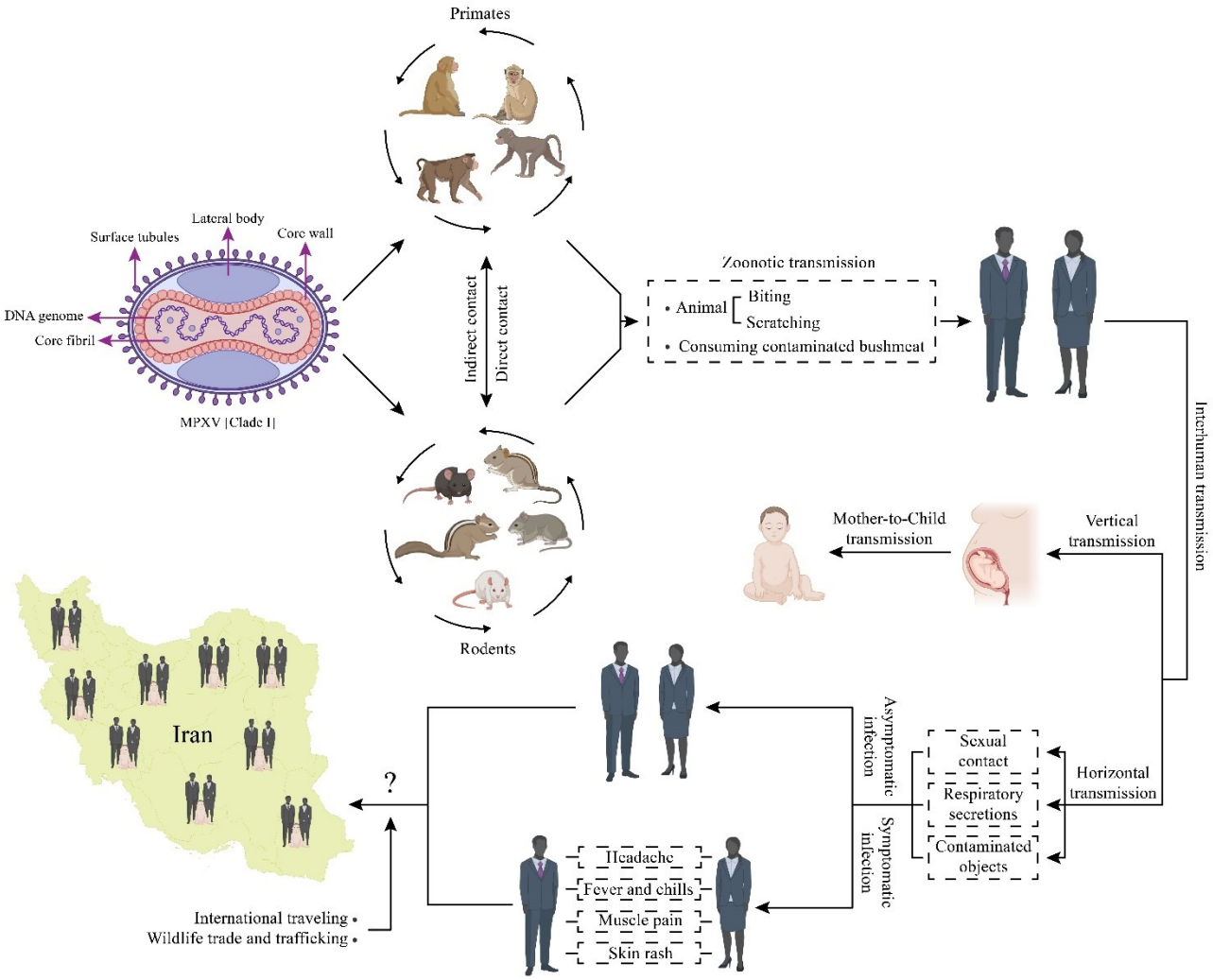

Fig. 1: The schematic representation of the transmission cycle of the monkeypox virus [MPXV] and the possible routes for virus translocation into Iran (4)

The lack of accessible diagnostic tools, especially in resource-limited regions, in conjunction with poor communication systems could exacerbate the situation by bringing poor detection, surveillance, and data reporting, ultimately delaying the time to contain the disease's spread. Therefore, it is imperative to establish well-equipped laboratories aligned with international standards, with rapidly scaling-up infrastructure, reliable systems for sample collection and transportation, and implementing standardized diagnostic protocols coupled with strengthening real-time data sharing for better outbreak response and management.

Also, there is a need to raise public awareness via diverse communication channels across all nations at risk where people may lack sufficient up-to-date knowledge about the virus and its characteristics, the routes by which the virus is transmitted to humans, the common symptoms that may present after being in contact with confirmed individuals, and the preventive measures that can be taken to mitigate the risk of virus transmission and for travelers to affected areas. This could lead to delays in seeking medical attention, resulting in more severe clinical conditions and further spreading of the disease. Furthermore, stigmati-

zation and discrimination related to mpox must be addressed in terms of sexual orientation, gender identity, and the status of HIV infection as it could lead to discouraging individuals from seeking care and treatment for fear of ostracism (5). In addition, a well-resourced healthcare center with a well-informed and skilled workforce in technical and safety procedures is needed to provide appropriate medical care to those with severe infections, as inadequate resource allocation could potentiate adverse outcomes. Besides, it is imperative to invest in developing new and broadly protective vaccines offering long-term immunity against multiple related strains and securing vaccine supplies for a fair distribution across the nations, as an insufficiently allocated budget for building vaccination infrastructure contributes to low vaccine manufacturing and vaccination coverage for at-risk populations. Targeted vaccination with third-generation vaccines coupled with addressing inequity and vaccine hesitancy needs to be prioritized for those at risk of virus transmission—including close contacts of newly diagnosed individuals and healthcare workers. Equally important, efforts must be made to develop efficient therapeutic strategies, strengthen manufacturing capacities, and stockpile antiviral agents, such as tecovirimat, to reduce the death rate in an outbreak scenario, secure access to life-saving medical countermeasures, and meet demand.

In conclusion, the recent emergence of the newly identified strain of mpox is a wake-up call to all the nations at risk, including Iran, that underscores the importance of outbreak preparedness, readiness, and response plans and actions that must be taken to better secure the national public health within the one health agenda.

Conflict of Interest

The authors declare that there is no conflict of interest.

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