Rev. Inst. Med. Trop 2022; 17(2):1-3
10.18004/imt/2022.17.2.1

Editorial

Monkeypox: challenges of an old disease in a new perspective.

Viruela del simio: desafíos de una vieja enfermedad en una nueva perspectiva.

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Monkeypox, a zoonotic disease initially restrict in some endemic countries, has acquired a distinct epidemiological feature in 2022. Before current outbreak, two distinct genetic clades of monkeypox virus were responsible for the cases in the endemic regions, the Central African (or Congo Basin) and the West African clade, and the animal-human contagion was the main route of transmission, associated to occupational exposure, with emphasis on traders, artisans, healthcare professionals, farming, and hunting. Male patients were responsible for approximately 60% of cases(1).

On 7th May 2022, the World Health Organization (WHO) was informed a confirmed case of monkeypox in the United Kingdom, an individual who travelled to Nigeria. Despite action of contact tracing and isolation, subsequently new cases were reported in several not endemic countries. The WHO declared a global health emergency on July 23, 2022, and as of October 31 2022, more than 77,000 cases have been confirmed from 109 countries and 36 death have been reported(2).

Different from cases in the endemic countries, the current outbreak is mainly affecting males between 18-44 years who are account for 79.6% of cases. Additionally, among cases with known data on sexual orientation, 87.3% identified as men who have sex with men (MSM)(2). This demographic profile has raised questions about possible mutations in the virus beyond possible new transmission routes.

Luna et al performed a phylogenomic analysis of available Monkeypox virus (MPXV) genomes to determine their evolution and diversity. They observed that all MPXV genomes are grouped into three monophyletic clades: two previously characterized clades and a new emerging clade holding genomes from the ongoing 2022 outbreak(3). In the Aug 12 2022, WHO announced the new names for MPXV variants: the former Congo Basin (Central African) clade as Clade one (I) and the former West African clade as Clade two (II). Additionally, it was agreed that the Clade II consists of two subclades, the Clade IIa and Clade IIb, with the last referring primarily to the group of variants largely circulating in the 2022 global outbreak(4).

The concentration of cases in MSM in current outbreak associated to atypical localization of lesions in genitals and perianal led to the investigation of the role of semen and other corporal fluids in the transmission of MPXV. Preliminary results were able to demonstrate the presence of MPXV in semen, saliva and urine, however, at a lower concentration than in the cutaneous lesions(5). These results suggest the close contact during the sexual activity associated to presence of virus in body fluid could explain the rapid spread of cases in current outbreak.

Different from clinical features in endemic countries, the classic prodromal symptoms (fever, fatigue, lymphadenopathy and headache) have been infrequent in cases of current outbreak. Data of cases compiled by WHO shown the fever has been presented in 58% of cases, headache 31%, any lymphadenopathy 30% and fatigue 29%. Furthermore, the classic multiple uniform lesions, starting as maculopapular progress thought vesicular, pustular and crust, and centrifugal pattern has not been observed. Additionally, previously unusual symptoms have been frequent in current outbreak, such as genital rash (46%), oral rash (9%) and anogenital pain and/or bleeding (0,8%)[(2)]. This atypical manifestation associated to occurrence of disease in non-endemic countries has been a barrier to correct diagnosis of MPX. Moreover, the concomitant other sexually transmissible co-infection overtakes 30% in some series[(6)].

Typically, the MPX is a self-limiting benign disease, resolved in 3-4 weeks. The complications of MPX, such as secondary infections, pneumonia, encephalitis, and keratitis were mostly described in children and pregnant women. In current outbreak, 27 cases in pregnant or recently pregnant women have been reported without fatal case. Nevertheless, in current outbreak, the immunocompromised patients, such as advanced or untreated HIV, are the group at risk for severe disease and death. Among those with known HIV status, 49% were HIV-positive, part of them discovered HIV infection in the course of the diagnosis of MPX[(2)]. In the series cases of severe monkeypox in hospitalized patients of United States, 82.5% of patients were HIV positive and 72% had CD4 count < 50 cells/mm3. Only 8.5% of them were on antiretroviral therapy at the time of monkeypox diagnosis.[7] The common complications have been proctitis, penile edema, severe rectal and anal pain and extensive perineal involvement. Cases of serious ocular complication, esophageal lesion and myopericarditis have been reported[(8-10)].

The alternatives of an effective antiviral against MPXV have been neglected. Three antivirals are active against MPXV: cidofovir, brincidofovir and tecovirimat, however, the clinical data of effectiveness and safety in humans are limited[(11)]. Tecovirimat, a drug with activity against orthopoxiviruses, appears to be more promising, although data related to effectiveness, duration of treatment, risk of viral rebound and toxicity are still scarce. A series case of clinical use of tecovirimat in United States, involving 527 patients, indicate well tolerance. Nonetheless, the default of a randomized controlled clinical trial impedes conclusions of effectiveness[(12)].

As well to antiviral, the vaccine against MPXV also has been neglected. The Modified vaccinia virus Ankara-Bavarian Nordic vaccine (MVA-BN) was recently approved as emergency use against MPX in some countries, despite a lack knowledge of efficacy. Cases of MPX after vaccination have been reported and a recent trial observed low levels of MPXV neutralizing antibodies after vaccination in health individuals[(13)].

Finally, despite the MPX is not a new disease, the current outbreak exposes several knowledge gaps, such as the interaction of HIV infection in the evolution of MPX, the best clinical management, including the antiviral, as well as challenges in relation to effective prevention measures. Meanwhile, early diagnosis, contact tracing and isolation measures remain the best strategies to contain the disease.

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