Editorial

MONKEY POX, A NEW PANDEMIC ON THE MEDICAL HORIZON.

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doi: https://doi.org/10.51127/JAMDCV4I2 editorial

How to cite this:
Hussain A. Monkey pox, a new pandemic on the medical horizon. JAMDC. 2022;4(2): 50-52
doi: https://doi.org/10.51127/JAMDCV4I2 editorial

Monkey Pox is a zoonotic disease caused by an enveloped DNA virus of the Orthopox virus family. The first human infection was discovered in 1970 in the African continent. The main source is wild rodents, but sporadic human cases were reported in Africa. The current spread of the virus across the globe involving more than 3000 cases so far, may be due to multiple reasons, including but not limited to changes in the virus biology, human behavior, fading immunity against smallpox, increase in international traveling, large gatherings with on-site unprotected sex, and relaxing of Coronavirus restrictions.[1]

The main transmission routes are respiratory droplets, skin contact with lesions, contact with animal secretions, contaminated fomites, and possibly sexual routes.[2] Sex-related transmission has not yet been established, although studies support the relationship. The virus had been detected in seminal fluid in many positive cases.[3] More cases are detected among those having men-to-men sex and are linked to large gatherings with on-site sex activities. Also, as the lesions are predominantly on the face, hands, genital & anorectal area, so can be confused with other sexually transmitted infections (STIs), especially when there are few or a single lesion. Safe sex practices, especially barrier methods such as condoms, are recommended up to 8 weeks after the resolution of the disease.[2,3]

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Cases have also been detected in heterosexual men; hence, it's not entirely a disease in homosexual men. Vertical transmission is also reported and newborns can contract the infection from the infected mother during birth. People at high risk of getting the infections are exposed to wild animals, immunocompromised, HIV-positive cases, people having other STIs, international travelers, and those having unsafe sex at large gatherings with on-site unprotected sex activities.[4,5]

Many cases are mild or even asymptomatic and may spread the disease. The most common presentation is a combination of constitutional symptoms, skin rash on face / hands / soles and acute lymphadenopathy: especially when someone has international travel history, large gatherings party with on-site sex, or exposure to cases or exposure to wild rodents. Skin rash starts as inflammation-related macules, which then accumulate further inflammatory fluid in the epidermis to progress as vesicles & then necrosis of the cells changes the inflammatory fluid to pus, now called a pustule. Pustules can rupture and make crusts / superficial ulcers. The face is involved in 95% of clinical cases, whereas 75% will involve hands and soles.[6] Oral mucosa is involved in 70% of clinical cases. The genital area is involved in 30-40% of cases and can be confused with other Sexually Transmitted Diseases such as Syphilis.

A single lesion may make it difficult to suspect the disease and confuse it with Syphilis. Often there are multiple lesions. The rash is less common on the trunk and central body. Genital involvement is more with those with men-to-men sex. Lymphadenopathy is a useful diagnostic clue

that helps differentiate monkeypox from other viral infections that can give similar rash, such as Measles, chicken pox, smallpox, etc. However, as the infection mainly comes from wild rodents, plaque or tularaemia should be kept in mind, which also causes lymphadenopathy. But plaque and tularaemia usually don't cause the typical rash caused by monkeypox. Associated symptoms and signs include constitutional symptoms, which may be mild or severe. Internal organ involvement is less common but a serious complication of the disease. It includes viral pneumonitis, myocarditis, encephalitis, hemorrhagic disease, and keratitis. Superadded bacterial infection is also common. The complications are more in immunocompromised patients, pediatric age and old age cases, pregnancy, and those with pre-existing comorbidities.[6,7] The virus is detected by a swab of the lesion/rash and PCR. Samples should be collected and transported with caution. Serological testing or antigen testing is not helpful due to the cross-reactivity of antigens and antibodies with other pox viruses of the Orthopox family. The smallpox vaccine will also affect serology.[8]

Vaccine & Treatment: High-risk people are offered the vaccine in developed countries, including the UK, Canada, and the USA. As smallpox and monkeypox are genetically similar, hence vaccines and antiviral for smallpox may also help for monkeypox as well.[9] Small Pox vaccine is effective for 85% of the cases and makes the disease milder. A new vaccine using the attenuated vaccinia virus is also available in a limited supply since 2019. There is no specific treatment for monkeypox. Antiviral drugs, including Cidofovir, binicidofovir, and tecovirimat, have been used with limited human data, but animal studies have shown hopeful results. Tecovirimat has a few side effects, a relatively safe drug available both as oral and intravenous preparations. Cidofovir is primarily used against cytomegalovirus (CMV) and has limited data for use against monkeypox with potential nephrotoxicity. Binicidofovir has a relatively better side effect profile than Cidofovir and is less nephrotoxic.[10] Antivirals are recommended for immunocompromised patients (transplant cases, those on biological drugs such as TNF inhibitors, those with systemic autoimmune disease, HIV and AIDs patients with low CD 4 counts, cancer patients, those receiving chemotherapy or radiotherapy, etc.), those with pre-existing skin diseases (eczema, psoriasis, or generalized skin diseases), or seriously sick patients with internal organ involvement or hemorrhagic disease, those with systemic sepsis, or high-risk cases such as pregnancy, children under eight years of age or those with comorbidities. Otherwise, the majority of the cases recover within 2-4 weeks. Immunoglobulins (IG) can be considered for post-exposure patients at very high risk of severe monkeypox diseases such as hematological malignancies or bone marrow transplant cases. Data for immunoglobulin use is limited.[9,10]

Healthcare professionals will need more education to manage these cases. Health awareness needs to be spread sensitively by targeted health education to increase enhanced reporting of the symptoms without stigma. Public health awareness in the community is of utmost importance to implement preventive measures without stigmatizing the disease and to avoid the undetected spread of the disease.[3,6]

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