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Letter to Editor

Outbreak of Mpox - an emerging epidemic and a warning to the world

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Dear Editor,

Human Mpox (formerly known as, monkeypox) outbreak is spreading globally even in nonendemic countries. While the world is taking a pause to refresh after strongly fighting against the COVID-19 pandemic, Mpox outbreak brings yet another major concern. Information regarding the prevalence, epidemiology, diagnosis and management protocols of Mpox infections are limited. Mpox is a viral zoonotic infectious disease, caused by Mpox virus, belonging to genus Orthopox virus and family Poxviridae. It is a double stranded DNA virus which thrives in rodents like rats and squirrels.

The first case was reported in the year 1970 in Democratic republic of Congo and later many outbreaks have been reported from African countries.[1] World Health Organisation has declared the Mpox outbreak as Public Health Emergency of International Concern (PHEIC) on July 23, 2022 when a multi country outbreak of Mpox affected more than 80 non endemic countries gaining global attention[1]. In India, the outbreak started with the first case reported from Kerala on 14 July, 2022. Currently 23 cases of Mpox has been reported from India. The Ministry of Health and Family Welfare (MoHFW), Government of India has released complete and extensive guidelines for proper management of Mpox infected patients.

Mpox is generally transmitted from one person to another by close contact with the sick patients or with fluids in the dermal lesions.[2] Mpox is often a self-limiting infection with symptoms like fever, skin lesions, cough, subsiding in 2-4 weeks.[3] Some patients may present with breathlessness, dyspnoea, chest pain,lymphadenopathy etc. ending up with complications like severe bronchopneumonia, pulmonary necrosis and consolidation.[3] In humans, the occurrence of the above complications are higher among unvaccinated individuals.[4,5] Few cases of Mpox may present with acute tonsillitis, cervical lymphadenopathy, respiratory distress with a worsening clinical scenario. Mpox can also manifest with various dermatologic and clinical findings like skin rashes, anogenital lesions, mucosal lesions, etc.[6] Co infections with respiratory viruses like influenza virus, SARS-CoV2 has also been reported in immunosuppressive patients.[7]

The diagnosis of the disease is confirmed by detecting the viral DNA by PCR (Polymerase chain reaction) test. National Institute of Virology (NIV), Pune is the Nodal centre for confirming the diagnosis of Mpox. The Indian Council of Medical Research (ICMR)—Department of Health Research, has authorised 15 more virology institutions and laboratories to perform diagnostic tests to confirm Mpox disease.[8] National Centre for Disease control (NCDC) and the ICMR are keeping a close watch and the health officials are instructed to vigilantly monitor the situation.

There is no specific treatment protocols for managing Mpox infections. Isolation of confirmed cases and supportive therapy is recommended. Treatment approaches

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are typically symptomatic and managing complications. Since, Mpox infection has been associated with many respiratory complications, clinical monitoring of the patients including heart rate, respiratory rate, pulse oximetry become essential. Supportive oxygen therapy, respiratory support, chest physiotherapy may be indicated in some patients. The FDA (Food and Drug Administration) approved antiviral drug namely, tecovirimat (TPOXXTM), which was previously used in the treatment of small pox, is the currently recommended drug for treating Mpox viral infection associated with respiratory complications.[9] Tecovirimat, act on the envelope of Orthopox viruses and inhibits the VP37 envelope-wrapping protein.[10] This drug is available in both oral and intravenous preparations. Due to safety constraints, the other drugs such as cidofovir and vaccinia immune globulin are not in regular use currently.

Mpox is antigenically related to small pox viruses. Based on that, the small pox vaccines are considered to be effective against Mpox as well. Currently, the vaccines are recommended only for high risk patients. Conventional vaccines such as ACAM2000, The Aventis Pasteur Smallpox Vaccine (APSV), JYNNEOS (also known as Imvamune or Imvanex) and other vaccines like mRNA based vaccines, Modified Vaccinia Ankara-Bavarian Nordic (MVA-BN) vaccine, etc are few of the available vaccines found to be effective against Mpox viruses.[11] However, the data about the efficacy and safety of the vaccines in preventing Mpox infections are critical.

Since the world is facing many outbreaks of viral infections across the globe, it is important that public need to be aware of the emerging and re-emerging viral infections. Proper education about handling and exposure to infectious wildlife would help in minimising viral transmission. Awareness among the healthcare professionals helps in early identification, intervention and initiation of appropriate therapy before the onset of complications. Complications and long term sequelae should be kept in mind while treating the Mpox infections and follow up studies would be helpful. Further, high risk groups such as Men who have sex with men (MSM) and immunocompromised patients like people living with HIV should be vaccinated in order to minimise the morbidity and mortality. The recommended vaccines are believed to be effective if administered early. Since Mpox is a zoonotic infection, viral genetic shift and the risk of human spread is a great concern. World needs to move unitedly and cautiously to contain the viral outbreaks. Rapid detection of cases is crucial in containment of Mpox viruses. Before the outbreak rapidly spreads to western countries and beyond, we need to suppress the outbreak and improve the herd immunity.

1. Conflict of Interest

None.

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