Preparedness and strategies for addressing monkeypox infection in pregnant women in India

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As the world is just recovering from the impact of COVID-19, another threat is looming large. More than 26,864 cases of monkeypox (MPX) are reported from 88 countries, including 6 cases from India. Currently Europe is the epicenter of the outbreak contributing to nearly 50% of the global cases without any recent travel links to MPX endemic areas. Orthopoxvirus, the causative agent of MPX, results in a smallpox-like disease in humans. MPX in humans was initially reported in 1970 in the Democratic Republic of the Congo (DRC) and subsequently in other regions, especially in West and Central Africa. Currently, there is no approved treatment for MPX. Smallpox vaccination was reported to provide approximately 85% protection against human MPX. After the eradication of smallpox, vaccination was discontinued in India and other countries in 1980. Pregnant or breastfeeding women and younger children are at increased risk of developing severe disease and adverse health outcomes associated with MPX. Children are more prone for MPX associated complications such as bacterial superinfection, cellulitis, sepsis, abscess, encephalitis, respiratory complications, pneumonia, keratitis, and corneal scarring leading to higher mortality and morbidity. Similarly, women of childbearing age constituting 22.2% of the total Indian population are vulnerable to MPX and need special attention. The Ministry of Health and Family Welfare, Government of India issued the guidelines for the management of MPX disease. However, these guidelines do not provide guidance on the management of pregnant women infected with the MPX virus. Based on experience with the PregCovid registry (https://pregcovid.com/), we suggest developing guidelines for the diagnosis and management of MPX in pregnant women and newborns in India. The obstetricians and neonatologists engaged in the management of MPX in pregnant women and neonates globally need to be consulted to develop evidence-based guidelines appropriate for India and other low-resource settings. These guidelines shall be revised based on real-time experience from India and the global data.

Cesarean section is recommended in the presence of genital lesions due to MPX and also in the absence of genital lesions. We, therefore, recommend discussing the risk of neonatal MPX infection, and the benefits, and risks of cesarean section with the pregnant woman and her relatives. Although the data is limited, there is a risk of vertical transmission and fetal demise, hence, we recommend close monitoring of pregnant women exposed to the MPX virus in India. Based on the COVID-19 experience, we recommend institutional isolation of both asymptomatic as well as symptomatic MPX-positive pregnant women to ensure maternal and fetal surveillance.

We recommend training Accredited Social Health Activists and other frontline healthcare workers on MPX case identification, timely reporting, and facilitating the referral of pregnant women to the nearest healthcare facility for appropriate obstetric care. Community awareness and education about MPX should be planned for early detection of MPX in pregnancy. The network of Indian Council of Medical Research, Department of Biotechnology, Department of Science and Technology, Council of Scientific and Industrial Research, Multidisciplinary Research Units, Model Rural Health Research Units, Viral Research & Diagnostic Laboratories in India need to be prepared for establishing diagnostic facilities for MPX as previously done for COVID-19 or the COVID-19 diagnostic laboratories can be repurposed for MPX diagnosis. The referral linkages should be established for the transportation of samples to the designated MPX laboratories.

We propose the following recommendations for India:

- Awareness and training of healthcare providers in public and private healthcare facilities.
- Developing diagnostic laboratories and referral linkages in rural and urban areas and creating facilities for institutional isolation.
- Formulation of the evidence-based guidelines for diagnosis and management of pregnant women.

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and neonates and this necessitates developing registry of pregnant women and new-borns exposed to MPX virus and their follow-ups.

- Establish multidisciplinary team for management of MPX in pregnant women and newborns (obstetrician, neonatologist, anesthetist, dermatologist, psychiatrist and other specialists) at tertiary care facilities.

- To conduct studies on safety and efficacy of available antivirals and vaccines for the treatment of MPX in pregnant women.

- Genomic surveillance of MPX virus as the virus is reported to be rapidly evolving.

- Strengthen public and private health care system for MPX outbreak and epidemic preparedness and response.

The recent outbreak of MPX necessitates extensive research through coordinated high-quality studies in India in coordination with global research institutes. This would help in generating new evidence that can be incorporated into global guidelines and policies.

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