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Chikungunya fever in India

Vishnupriya CHATTIKKAL, Stela COJOCARU,
Mirabela MAXIMCIUC
Nicolae Testemitanu State University of Medicine and Pharmacy, Chișinău, the Republic of Moldova

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Introduction

The Chikungunya virus (CHIKV) is a vector-borne alphavirus transmitted by Aedes aegypti and Ae. albopictus. Initially endemic to Africa, CHIKV has since spread globally. In present day India, Chikungunya fever (CHIKF) is endemic, with outbreaks occurring every few years and annual transmission across most of the country. This article explores its significance, aetiology, clinical manifestations, diagnosis, and treatment strategies in India, emphasising its public health burden.

Material and methods

A systematic review of the PubMed, PMC, and Elsevier databases was conducted to search for Chikungunya fever, epidemiological studies, clinical reports, and diagnostic evaluations specific to India, synthesising data on prevalence, clinical outcomes, and treatment efficacy from 2000 to 2024.

Results

CHIKF outbreaks in India occurred in 2006, 2010 (~49,000 cases), 2016 (~64,000), 2021 (~132,000), and 2023 (~93,000), primarily featuring the ECSA genotype. CHIKV transmission persists between outbreaks. Surveillance is inconsistent; actual cases may be 10 to 30 times higher than reported due to symptom overlap with dengue or

malaria. Southern states such as Kerala and Karnataka, along with Delhi, remain hotspots, particularly post-monsoon (July-November). Studies indicate that mutations in CHIKV enhance vector adaptability and transmissibility. Clinically, high fever (95%) and arthralgia (87%) are common across all ages, with 40% displaying a maculopapular rash. Global literature suggests children manage CHIKF better than adults; however, Indian studies indicate that infants experience more CNS issues, including meningoencephalitis, while the elderly suffer more from joint pain, including chronic arthritis. Atypical manifestations encompass asthenia, tenosynovitis, encephalitis, Guillain-Barré syndrome, myocarditis, and hepatitis. The high rates of diabetes and hypertension contribute to severe complications among Indian adults and the elderly. Elderly individuals (≥60 years) are noted to experience marked systemic involvement — encompassing renal, hepatic, respiratory, and neurologic complications. Congenital infections present significant risks for severe neonatal CHIKF (encephalitis, haemorrhage, myocarditis). Diagnosis employs ELISA, RT-LAMP, and RT-PCR techniques. There is currently no specific antiviral treatment; management focusses on symptom relief and supportive care. Vector control through pesticide spraying has reduced incidence by 30%. No approved vaccine is yet available.

Conclusions

CHIKF remains a significant challenge in India due to viral mutations and rising vector populations. Any acute febrile illness with rash or seizures during an outbreak should be tested for CHIKV in children. A high prevalence of chronic joint pain (40-60%) following CHIKF in Indian adults mimics rheumatoid arthritis. Prevention strategies are crucial since no vaccines or antivirals are available.

Corresponding author:
Stela Cojocaru,
e-mail: stela.cojocaru@usmf.md