Oropouche Fever and its Current Context in Brazil

A Febre de Oropouche e seu Contexto Atual no Brasil

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The Oropouche virus (OROV), part of the Bunyavirales order and the Peribunyaviridae family, belongs to the Orthobunyavirus genus under the species Orthobunyavirus oropoucheense. It has a single-stranded, negative-sense RNA genome, enclosed by a spherical lipid membrane. Between 1954 and 1988, 187 virus species were identified in the Amazon region of Brazil from mammals and mosquitoes. Recent studies emphasize the significant diversity of arboviruses across South America.[1]

Active epidemiological surveillance in Brazil has detected at least five viruses from the Peribunyaviridae family, including the Oropouche virus, which causes Oropouche fever. This fever is a significant public health concern and is a potential candidate for the next epidemic in the Americas. It is responsible for several outbreaks of acute fever identified in Latin American countries, registering more than half a million reported cases.[2] In 2024, Brazil recorded over 7200 cases of Oropouche fever, with two confirmed deaths – the first reported fatalities globally. The majority of cases, 51.9% (3779 cases), were reported in males. The age group with the highest incidence was 30 to 39 years, accounting for 21.2% (1541 cases).[3] The disease, transmitted by the Culicoides paraensis mosquito, is present in 20 states, with the highest incidence in the northern region, particularly in Amazonas and Rondônia.[4] Despite its prevalence, the OROV is often underdiagnosed due to its clinical similarity to other arboviruses like dengue, chikungunya, and Zika. With over half a million reported cases in Brazil over the past six decades, its true impact is likely underestimated, owing to limited diagnostic tools and the overlap of symptoms with other febrile diseases.[2-4]

Ongoing research in Brazil is exploring the Oropouche virus's transmission cycle, clinical manifestations, and the potential for vertical transmission, which has not yet been scientifically confirmed. Reports from Pernambuco include one fetal death, one miscarriage, and four cases of newborns with microcephaly potentially linked to OROV infection.[4] A case in Italy raised concerns about the potential sexual transmission of the OROV, but so far there is no documented evidence of such transmission in Brazil. The Italian case remains isolated, and further research is needed to confirm this transmission route. The detection of replication-competent viruses in semen is a crucial factor, indicating that the OROV can remain viable and potentially infectious in this fluid, which is similar to the behavior of the Zika virus.[5] Oropouche fever symptoms include fever, headache, muscle and joint pain, and with occasional hemorrhagic and neurological complications. There is no specific treatment or vaccine, and care is focused on symptom management.[1,4]

Brazilian health authorities have implemented several strategies to control Oropouche fever, focusing on identifying vector species and their breeding sites to quickly stop transmission. Nationwide surveillance is maintained through the Ministry of Health in collaboration with states and municipalities, tracking cases and deaths. Regular technical visits, investigations, and active vector searches are conducted. Additionally, three research teams are studying the virus' genomics, patient symptoms, and its transmission cycle in mosquitoes.

AUTHOR CONTRIBUTIONS

All authors contributed equally to this manuscript and approved the final version to be published.

COMPETING INTERESTS

The authors have declared that no competing interests exist.

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