Journal of Preventive Epidemiology

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Preparing for next arboviral epidemics in Latin America; who can it be now? – Mayaro, Oropouche, West Nile or Venezuelan Equine Encephalitis viruses

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Received: 28 Apr. 2017
Accepted: 20 May 2017
ePublished: 4 June 2017

Keywords: Arboviruses, Chikungunya, Zika, Emerging; Epidemiology

Citation: Rodríguez-Morales AJ, Sánchez-Duque JA. Preparing for next arboviral epidemics in Latin America; who can it be now? – Mayaro, Oropouche, West Nile or Venezuelan Equine Encephalitis viruses. J Prev Epidemiol. 2018;3(1):e01.

Core tip

Understanding the impact of arbovirosis in terms of clinical commitment, disability and costs to the health system, requires a greater proportion of investigations involving multiple medical specialties, mainly in susceptible countries such as those in Latin America, in order to be prepared to control possible future epidemics of new arboviruses.

During the last decades, Latin America has been threatened by an unprecedented explosion of emergent arboviral outbreaks (1). Actually, the arboviruses are classified in four groups, A, B, C and D, being the first two of major clinical importance. In the group A, it is found the genus Alphavirus corresponding to the family Togaviridae, this encompass the Chikungunya virus (CHIKV), Mayaro virus (MAYV) and Venezuelan Equine Encephalitis virus (VEEV); the group B corresponds to the family Flaviviridae, which includes Dengue virus (DENV), Zika virus (ZIKV) and West Nile virus (WNV); the third group with epidemiological importance due to the propagation capacity is the family Orthobunyaviridae who has as archetype the Oropouche virus (OROV) (2-4).

It is difficult to exaggerate the medical importance and burden of vector-borne infectious diseases, due to last decade epidemics, in which a series of emerging and re-emerging arboviruses are propagated in unexposed geographic areas, such as South America, Central America and areas of the Caribbean region (1,2). Initially, CHIKV alerted all public health authorities in late 2013, followed by ZIKV in 2015, likewise, isolated and periodic cycles in different regions by DENV, OROV, VEEV and MAYV (1,3,4). As if that were not enough, the biological and clinical behavior exhibit different characteristics but also great similarities, thus, it is easy confused between them, or even overlap, but also co-infect, especially in early clinical stages when a high degree of experience is required in spite of the identification of distinctive signs and symptoms like focal edema of distal extremities in ZIKV, meningitis in OROV and retro-orbital pain and bleeding diathesis in DENV; without forgetting the possibility of coinfections and the specific conditions in pregnant women and children (5,6), especially in CHIKV and ZIKV infections.

The epidemic of these emerging and re-emerging arboviruses are due to a number of factors such as climate change, levels of urbanization, number of trips, foreign trade, poor socioeconomic conditions, susceptible geographical areas (tropical and subtropical regions) among other factors (5,7). Since 2011, the Pan-American Health Organization (PAHO) has alerted early about the CHIKV epidemic, taking action with the help of health authorities from high-risk countries, insufficient measures to prevent arrival and transmission (6).

Recognizing the importance of epidemiological control of emerging viral diseases, many preventive measures should be taken, such as the increase in Aedes vector control (7) and containment strategies guided by scientific literature and epidemiological guides generated in recent decades, focused to controlling tropical viruses with epidemic potential (3,4), Understanding the impact of arbovirosis in terms of clinical commitment, disability and costs to the health system, requires a greater

proportion of investigations involving multiple medical specialties, mainly in susceptible countries such as Latin America, in order to be prepared to control possible future epidemics of new arboviruses. Given this complex scenario, any in public health and infectious diseases would be "paranoid" and trying to know who is the next one arbovirus that is knocking at our house door, wishing to be protected from its arrival, asking ourselves, "who can it be now?", as the title and lyrics of Collin Hay, in the 1981 pop song recorded by the Australian band "Men at Work". In our case, our fear and related anxiety is based on true facts that have been demonstrated by recent epidemics. Then and last, we need to increase our preparedness for emerging zoonotic and non-zoonotic arboviruses, their potential impacts and particularly to improve the vector control in tropical countries, as those in Latin America.

Authors' contribution

AJRM and JASD contributed equally to the manuscript.

Conflicts of interest

The authors declare no conflict of interest.

Ethical considerations

Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the authors.

Funding/Support

None.

References

1. Rodríguez-Morales AJ, Paniz-Mondolfi AE, Villamil-Gómez WE, Navarro JC. Mayaro, Oropouche and Venezuelan Equine Encephalitis viruses: Following in the footsteps of Zika? Travel Med Infect Dis. 2017;15:72-3.
2. Rodríguez-Morales AJ, Anaya J-M. Impacto de las arbovirosis artritogénicas emergentes en Colombia y América Latina. Rev Colomb Reumatol. 2016;23:145-7.
3. Patiño-Barbosa AM, Bedoya-Arias JE, Cardona-Ospina JA, Rodriguez-Morales AJ. Bibliometric assessment of the scientific production of literature regarding Mayaro. J Infect Public Health. 2016;9:532-4.
4. Culquichicón C, Cardona-Ospina JA, Patiño-Barbosa AM, Rodriguez-Morales AJ. Bibliometric analysis of Oropouche research: impact on the surveillance of emerging arboviruses in Latin America. F1000Res. 2017;6:194.
5. Paniz-Mondolfi AE, Rodriguez-Morales AJ, Blohm G, Marquez M, Villamil-Gomez WE. ChikDenMaZika Syndrome: the challenge of diagnosing arboviral infections in the midst of concurrent epidemics. Ann Clin Microbiol Antimicrob. 2016;15:42.
6. Rodríguez-Morales AJ. La amenaza de Chikungunya y otros virus emergentes en Las Américas. Rev Hisp Cienc Salud. 2015;1:9-12.
7. Rodríguez-Morales AJ. Aedes: un eficiente vector de viejos y nuevos arbovirus (dengue, chikungunya y zika) en las Américas. Rev Cuerpo Médico HNAAA 2015. 2015;8:50-52.