

Abstract

The Arbovirus menace in Kenya; are we doing enough to stem it?

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Introduction: Arthropod-borne viruses (arboviruses) cause many diseases worldwide and constitute a major group of the world's emerging infectious disease problem. They are transmitted biologically among vertebrate hosts by hematophagous arthropod vectors such as mosquitoes and other biting flies, and ticks.

Ecology: Most arboviruses circulate in Kenya among wild animals, and many cause disease following spillover transmission to humans and agricultural/commercial domestic animals that serve as incidental or dead-end hosts e.g RVF, YF, CCHF and WN. Another risk of arboviral emergence stems from tropical urbanization and the colonization and expanding habitat by the highly anthropophilic *Aedes aegypti* mosquito which has led to the emergence of endemic cycles of urban DEN and CHIK viruses. Arbovirus distribution, like other vector-borne diseases vary in space and time, related to the ecology of the vector species, particularly at their immature stage, virus evolution, in some cases the ecology of the reservoir host and their transmission is likely to change with land use, socioeconomic and climate changes. The increasing frequency of other hemorrhagic fever outbreaks including ebola and marburg in East Africa in the absence of sufficient data on the virus ecology presents additional challenge that we are yet to learn to cope with.

Kenyan's historical perspective: Between the 1950s and early 1980s devastating arbovirus outbreaks including RVF, YF, ONN, CHIK, DEN stimulated a lot of research and surveillance in E. Africa leading to accumulation of extensive data, knowledge and African arbovirus repositories which exist to this day in the developed North. This was followed by a lull when attention and focus in funding and interest in virology shifted to HIV/AIDS at the start of the pandemic in early 1980s.

The first outbreak of YF in Kenya 1993-95 and the devastating outbreak of RVF that swept across the East African region in 1997/98 brought about the realization that Arboviruses had re-emerged in the region all over again and this has re-energized arbovirus research and surveillance activities in the region. The recent outbreaks have provided opportunities for research and training for indigenous researchers and students. New knowledge has been added to what exists in terms of disease ecology, prevention, control, diagnosis and management. There are still gaps that are yet to be filled and the involvement of East African researchers and public health officers will be crucial in ensuring a real state of preparedness as we face the challenge of arbovirus outbreaks in to the future.

Key words: Abovirus, menace, Kenya

Received: November, 2012

Published: December, 2012