



Pacific Center for
Emerging Infectious Diseases
Research



UNIVERSITY
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MĀNOA

Department of Tropical Medicine, Medical Microbiology & Pharmacology

JOHN A BURNS SCHOOL OF MEDICINE, UNIVERSITY OF HAWAII AT MANOA

Endemic and Epidemic Infectious Diseases in Brazil

- 1: HIV-1 and HTLV-1 co-infection and impact on survival
- 2: Overview of epidemic Zika virus infection in Bahia

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HIV-1 and HTLV-1 co-infection is a common finding in endemic areas for both viruses, as they share similar routes of transmission. Evidence suggests co-infection accelerates progression to AIDS, resulting in shorter survival for co-infected patients. However, this issue is still a matter of debate. We have demonstrated in previous work that HIV-1 and HTLV-1 co-infection is associated with reduced survival time in both adults and children. In a recent study, we evaluated a large cohort of co-infected patients and compared survival, associated factors and causes of death for singly and co-infected individuals. We detected a shorter survival time for co-infected patients, but this difference was driven by ongoing HIV-1 replication. When we looked at stable patients, with undetectable HIV-1 plasma viremia, survival time did not differ for singly and co-infected patients. Moreover, causes of death were basically AIDS-related infectious diseases. Initial CD4 count did not differ for all patients, but co-infected patients who died during follow up had similar CD4 counts at baseline and at the time of death, while singly-infected patients had a significantly lower initial CD4 count, in comparison to the last available count. Taken together, these findings suggest that HIV-1 and HTLV-1 co-infection in patients with uncontrolled HIV-1 viremia reduces survival time, but successful cART is able to normalize survival time. It also suggests that higher CD4 count at baseline can mislead clinicians regarding immune status of co-infected patients, perhaps delaying the start of cART and, in consequence, increasing mortality by AIDS.

Following its introduction in Brazil a few years ago, Zika virus (ZIKV) spread rapidly over the Northeastern region states, causing an epidemic of microcephaly in babies born to women infected with ZIKV in the first trimester of pregnancy. Salvador, the capital state of Bahia, was hardly hit by ZIKV during 2015 and 2016. We detected an attack rate around 68% of entire population. The fast drop in new cases of ZIKV infection after the initial period, coupled with the high attack rate, and the subsequent immunization of more than two thirds of city's population probably makes a new ZIKV outbreak unlikely in the next few years. In a mathematical model, we demonstrate that these characteristics strongly limit the likelihood of a new epidemic.

Monday, April 8, 2019 at 12:00 noon
John A. Burns School of Medicine, Kaka'ako Campus
Medical Education Building Auditorium (Room 315)
For further information, contact (808) 692-1654