

Abstract

Zika Virus Epidemiology in Selected West African Countries between 2007 and 2012 †

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Abstract: Before its recent spread, serological investigations conducted between the 1960s and the 1990s showed the wide presence of Zika virus in Africa. According to the World Health Organization, the entire Africa continent is at risk of Zika outbreak due to the presence of the virus, competent vectors, and the low capacity for surveillance and containment of an epidemic. However, limited data are available on the recent prevalence in the African population. The aim of this study was to evaluate the immunity against Zika virus in samples of a selected cohort from West Africa, in order to investigate the circulation of the virus in the region during the first years of its emergence in the Pacific. Human serum samples were collected in 2007 and between 2011 and 2012 from a cohort of subjects from Mali, Senegal, and The Gambia. The samples were tested using an enzyme-linked immunosorbent assay (ELISA) detection kit and positives were further confirmed by microneutralization test. The results indicate that Zika virus is present and actively circulating in Senegal and The Gambia, with prevalence values of 13.7% and 6.9% in 2012, respectively. Although no significant differences in prevalence were found for the considered time period, seroconversion of some subjects showed the active circulation of Zika virus in the West African area. Analysis by age showed an increase in immunity in relation to increasing age, demonstrating that the population is consistently exposed to the virus throughout life and with a high possibility of being infected during reproductive age. In conclusion, the obtained results allow for better knowledge of the circulation of Zika virus within three different ecological and demographic contexts, and represent an update to the limited data currently available.

Keywords: Zika virus; seroprevalence; Africa



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