Yellow fever (YF) vaccination does not increase dengue severity : A retrospective study based on 11,448 dengue notifications in a YF and dengue endemic region

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Abstract

Background: We study the association between prior yellow fever immunization and clinical outcomes of dengue infections in individuals of varying sexes and ages. Serological interactions between dengue virus and other flaviviruses could drive antibody dependent enhancement, which is associated with disease severity in dengue infections. This effect may influence disease severity in individuals subsequently affected by related flaviviruses, such as dengue. We compare the severity of dengue episodes between patients vaccinated and non-vaccinated against yellow fever. Methods: We evaluated the severity of 11,448 lab-confirmed dengue cases reported in São José do Rio Preto, Brazil, in 7370 YF vaccinated patients compared to 4043 unvaccinated patients. We regressed dengue severity against YF vaccine status and a number of demographic, clinical, and laboratory variables as controls. We also evaluated the association between YF vaccination status and the clinical and laboratory symptoms of dengue patients. Results: We did not find any evidence of increased risk for severe dengue in patients vaccinated against YF (odds ratio = 1.00; 95% confidence interval = 0.87–1.14). Most of the variables analyzed did not have a statistically significant association with YF vaccination status. Conclusions: We found no evidence that YF vaccination in dengue-endemic areas increases the risk of severe dengue fever..

Keywords

Yellow fever, Dengue, Dengue severity, Yellow fever vaccination, Neglected tropical diseases.