

Is Yellow fever vaccination safe for HIV+ individuals?



[Source: Gershman and Staples, Centers for Disease Control and Prevention. Chapter 3](#)

Infectious Diseases Related to Travel

Yellow fever endemic to Africa and Central and South America, is a viral haemorrhagic disease that is characterised by jaundice. Fortunately, there is a live attenuated vaccine against yellow fever, that is safe and induces long lasting cellular and humoral immunity. Induction of long term protective immunity, prompted the World Health Organisation to remove the 10 year booster requirement.

Many areas affected by yellow fever, also experience the HIV epidemic, however there are no clear guidelines on yellow fever vaccination nor revaccination in HIV+ individuals. One of the main concerns of yellow fever vaccination (YFV) in HIV+

individuals, is safety because the vaccine induces short lived vireamia that is usually cleared within 14 days. Previous studies have demonstrated variable safety outcomes of yellow fever vaccinated HIV+ individuals. Thus, Colin de Verdiere *et al.*, conducted a trial to determine the safety and immunogenicity of profile of YFV vaccination in HIV infected aviremic individuals.

Colin de Verdiere *et al.*, observed similar safety profiles between YFV vaccinated HIV- and HIV+ (CD4 counts > 350cells/ μ l) individuals. Activation of cells by YFV did not induce HIV breakthrough in most of the HIV+ individuals, and only 5 HIV+ individuals experienced viral blimps, which were contained upon adjustment of their ART regime. As expected YFV induced vireamia cleared within 2 weeks post vaccination, however higher levels of YFV viral RNA were observed in HIV+ individuals compared with HIV- controls. By 28 days post vaccination both groups induced protective YFV antibody titres, which were maintained 1 year post vaccination. Immunomonitoring of YFV-induced T cell immunity, demonstrated that YFV-specific Th1 CD4+ and CD8+ T cell responses were lower in HIV+ individuals compared with HIV- controls. This suggests the need for YFV boosting in HIV+ individuals to induce similar levels of cellular immunity as HIV- controls.

In summary, Colin de Verdiere *et al.*, demonstrated that YFV is as safe in HIV+ individuals compared to HIV- individuals. YFV induced protective Ab titres but induces low YFV-specific cellular immunity in HIV+ individuals. These results prompt the need for larger scales studies, as well as suggest that YFV vaccination is safe, tolerable and revaccination should be considered in HIV+ individuals.

Journal Article: Colin de Verdiere *et al.*, 2019. [Immunogenicity and safety of yellow fever vaccine in HIV-1-infected patients.](#) AIDS

Article by Cheleka AM Mpande