Half-time seminar

HIV and other sexually transmitted infections in Guinea-Bissau

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Online participation via Zoom:
https://lu-se.zoom.us/j/64024796938

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Background

Guinea-Bissau has the world’s highest prevalence of HIV-2 but it has been decreasing over the last 30 years. Meanwhile the prevalence of HIV-1 has been increasing. The prevalence of HIV in most-at-risk populations such as female sex workers (FSW) has not been well studied. HIV-2 is less pathogenic compared to HIV-1 and has been shown to delay HIV-1 disease progression during HIV-1/2 dual infection.

Aims and methods

1. Evaluate three confirmatory tests for HIV type discrimination (Geenius, INNO-LIA and Immunocomb).
2. Describe the prevalence of HIV, HIV care continuum and HIV-1 drug resistance mutations (HIVDR) among FSW in Guinea-Bissau.
3. Investigate the longitudinal trend of Syphilis and investigate the potential association of a Syphilis infection on HIV disease progression/mortality.
4. Investigate the longitudinal trend of HTLV-1 and investigate the potential association of a HTLV-1 infection on HIV disease progression/mortality.
5. Study the pyroptosis marker caspase-1 in HIV-1, HIV-2 and HIV-1/2 dually infected individuals.

Project 1 investigate samples retrospectively selected from the Bissau HIV cohort, project 2 are a cross-sectional study that used venue-based recruitment and peer-referral to include FSW and project 3-5 use data from an open prospective cohort study. Several laboratory-based methods have been used including PCR, serological test and ELISA.

Preliminary results

Geenius has similar performance characteristics as INNO-LIA and performs considerably better than Immunocomb for differentiating between HIV-types. FSW in Guinea-Bissau are highly burdened to HIV and of all HIV-1 infected FSW only a third were virally suppressed. We found high levels of HIVDR mutations. Statistical analysis investigating aim 3-4 and laboratory analysis investigating aim 5 will be completed in 2021.

Importance

Being able to discriminate between HIV-1, HIV-2 and HIV-1/2 dual infection is imperative for the appropriate selection of antiretroviral therapy in regions with high HIV-2 endemicity as HIV-2 is inherently resistant to non-nucleoside reverse transcriptase inhibitors. Since HIV-2 infection is attenuated compared to an HIV-1 infection and the rate of CD4+ T cell depletion is slower, understanding host-viral, virus-virus and bacterial-virus interactions in HIV-1 and HIV-2 is important. The characterization of the HIV care continuum among FSW is imperative to inform future targeted interventions.
Publications and manuscripts


*Articles to be included in the thesis*