

Abstract:

Abstract OBJECTIVES: To describe the epidemiological and clinical characteristics of HIV-related tuberculosis in a female cohort, and to investigate the relative importance of recently transmitted infection and reactivation in the pathogenesis of adult HIV-related tuberculosis.

DESIGN: Members of an established cohort of female sex workers in Nairobi were enrolled in a prospective study. Women were followed up regularly and seen on demand when sick.

METHODS: Between October 1989 and September 1992 we followed 587 HIV-infected and 132 HIV-seronegative women. Standard protocols were used to investigate common presentations. Cases of tuberculosis were identified clinically or by culture. All available

Mycobacterium tuberculosis strains underwent DNA fingerprint analysis. **RESULTS:** Forty-nine incident and four recurrent episodes of tuberculosis were seen in HIV-infected women; no disease was seen in seronegative sex workers ($P = 0.0003$). The overall incidence rate of tuberculosis was 34.5 per 1000 person-years amongst HIV-infected participants. In purified protein derivative (PPD) skin test-positive women the rate was 66.7 per 1000 person-years versus 18.1 per 1000 person-years in PPD-negative women. Twenty incident cases (41%) were clinically compatible with primary disease. DNA fingerprint analysis of strains from 32 incident cases identified two clusters comprising two and nine patients; allowing for index cases, 10 patients (28%) may have had recently transmitted disease. Three out of 10 (30%) patients who were initially PPD skin test-negative became PPD-positive. Taken together, 26 incident cases (53%) may have been recently infected. DNA fingerprint analysis also identified two (50%) of the four recurrent tuberculosis episodes as reinfection. **CONCLUSIONS:** Substantial recent transmission of tuberculosis appears to be occurring in Nairobi amongst HIV-infected sex workers. It may be incorrect to assume in other regions of high tuberculosis transmission that active HIV-related tuberculosis usually represents reactivation of latent infection.