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Pulmonary Tuberculosis Treatment Outcomes in HIV Infected Patients on Antiretroviral Therapy

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Background: Tuberculosis (TB) is the most common opportunistic infection (OI) in HIV-infected patients. There are effective regimes for HIV and TB infection, but the concomitant treatment is difficult due to adverse effects, drug interaction, and worsening condition. Not all anti-TB drugs are available in developing countries. This study describes treatment outcomes of pulmonary TB in HIV-infected patients on antiretroviral therapy (ART).

Materials and Methods: This retrospective study was done at Bamrasnaradura Institute, Bangkok. The study was conducted among TB and HIV co-infected patients, aged 15 years and older, who received both anti-TB and ART (NNRTI-based). The patients were admitted in this institute from January 1, 2003 to December 31, 2004.

Results: Sixty-five patients (47 male) with a median age of 32 years old (range 20-58) was entered into the study. When the TB was diagnosed, the median CD4 count was 33 cells/ul (range 2-342). Fifty patients (76.92%) received standard anti-TB (HRZE) regimes for at least 2 months in the initial phase and fifteen patients (23.08%) did not receive regimes as above. ART was initiated at a median of 12 weeks (range 0-52) of TB treatment. Eight patients (12.3%) had already received ART before the TB diagnosis. Forty-three (66.1%) and 22 (33.9%) patients received nevirapine (NVP) and efavirenz (EFV) based regimes, respectively. Thirty-six patients (55.4%) received NVP and rifampicin (RFP) concurrently, and the median of overlapping day was 115 (range 5-394). Drug toxicity was observed in 26 patients (40%). There was no significant association between drug toxicity and concurrent use of NVP and RFP. Five patients (7.7%) had immune reconstitution syndrome and 4 patients (6.2%) had OI after ART. Thirty-three patients (50.8%) were clinically cured, 20 (30.8%) were cured, 5 (7.7%) were transferred out, 3(4.6%) had treatment interrupted, 3 (4.6%) died and 1 patient had treatment. There were no associations between treatment outcomes and anti-TB regimes, ART regimes and concurrent use of NVP and RFP, but initiating ART before or during TB treatment was significantly associated with favorable treatment outcomes.

Conclusions: Initiation of ART in the early course of HIV infection, before TB infection, yields a favorable pulmonary TB treatment outcome. NVP-based ART is an option for HIV-infected patients receiving RFP. This result is expected to be beneficial for medical personals involved in HIV patients especially in developing countries.

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Contrasting Epidemiology of *Salmonella Typhi* and *Non-Typhi Salmonella* Bloodstream Infections at Two Sites in Northern Tanzania

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Introduction: The current estimate of the burden of typhoid fever in Africa is based on population-based studies from Egypt and South Africa and no estimate is available for invasive *non-Typhi Salmonella* (NTS). To gain initial insights into the epidemiology of invasive salmonellosis in East Africa, we studied febrile admissions at three hospitals in northern Tanzania.

Methods: We enrolled consecutive febrile patients aged 2 months to 13 years at Teule District Hospital (TDH), Muheza, and at Kilimanjaro Christian Medical Centre (KCMC), Moshi, and febrile patients aged 13 years and above at KCMC and Mawenzi Regional Hospital (MRH), Moshi. All patients received a standardized clinical history and physical examination, aerobic blood culture, and HIV antibody testing.

Results: Of 3,664 children admitted to TDH, 319 (8.7%) were bacteremic of whom 23 (16%) were HIV antibody-positive on a single test, 161(50.5%) had NTS and 9 (2.8%) had *S. Typhi* bloodstream infection. Of 33 bacteremic children identified at KCMC, 9 (27%) were HIV-infected, 1 (%) had NTS and 10 (30%) had *S. Typhi* bloodstream infection. Of 52 bacteremic adults identified at KCMC and MRH, 20 (39%) were HIV-infected, 5 (9.6%) had NTS and 16 (30.8%) had *S. Typhi* bloodstream infection. In KCMC and MRH, NTS bacteremia was associated with HIV seropositivity in all age groups, 6 patients with NTS were HIV infected, but not with *S. Typhi* bacteremia. In TDH, NTS infection was also associated with HIV-positivity (OR 1.3, p=0.059) but none of the 9 *S. Typhi* infections occurred in an HIV-positive child.

Conclusions: The relative importance of *S. Typhi* and of NTS as causes of bloodstream infection among febrile, hospitalized patients varies considerable between two sites in northern Tanzania. NTS but not *S. Typhi* bloodstream infection is strongly associated with HIV infection. Understanding burden of invasive NTS and *S. Typhi* in Africa requires an approach that addresses considerable epidemiologic heterogeneity and that accounts for the influence of HIV seroprevalence.

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Impact of Antiretroviral Therapy on the Clinical Outcomes and CD4 Cell Responses in Children at Primary Health Care Facilities in Cameroon

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Background: Pediatric antiretroviral therapy is provided in all primary health care facilities in Cameroon. Despite scale-up of these perinatal prevention efforts, many children still become infected with the human immunodeficiency virus (HIV). This study assessed the impact of antiretroviral therapy (ART) on the clinical and immunologic outcomes of children in Cameroon.