HIV Care & PMTCT in Resource-Limited Settings

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Abstr. OBJECTIVE: To assess outcomes after antiretroviral therapy (ART) in adolescents and youth in Haiti, a country with a generalized epidemic of infection with HIV-1. METHODS: An assessment was made of survival, plasma HIV-1 ribonucleic acid (RNA) concentrations and HIV-1 drug resistance patterns after 12 months of ART in patients aged 13-25 years who presented to a clinic in Port-au-Prince, Haiti, with AIDS between 1 March 2003 and 31 December 2005. Participants received ART in accordance with WHO guidelines. Kaplan-Meier analysis was used to estimate survival probabilities and their 95% confidence intervals (CI) for the period from ART initiation to death. FINDINGS: Of a total of 146 patients, 96 (66%) were female; the median CD4+ T-cell count at baseline was 129 cells/ml. By Kaplan-Meier analysis, 13% of the patients had died at 12 months, 17% at 24 months and 20% at 36 months. A plasma HIV-1 RNA concentration > or = 50 copies/ml was seen in 40 (51%) of 79 patients 12 months after treatment initiation and was associated with poor ART adherence. Among 29 patients with > 1000 copies/ml at 12 months, resistance mutations to non-nucleoside reverse transcriptase inhibitors (NNRTIs) were detected in 23 cases (79%); to both NNRTIs and lamivudine in 21 (72%) cases; and to NNRTIs, lamivudine and other nucleoside reverse transcriptase inhibitors in 10 (35%) cases. One hundred and six participants (73%) reported sexual intercourse without condoms, and 35 of the 96 women (36%) were pregnant during follow-up. CONCLUSION: Adolescents and youth with AIDS receiving ART are at risk of virologic failure and disease progression and can therefore transmit HIV-1 to sexual partners and infants. Strategies to target the special needs of this age group are urgently needed. Address: Groupe Haitien d’Etude du Sarcome de Kaposi et des Infections Opportunistes, Port-au-Prince, Haiti. Daniel W Fitzgerald. dfitzgerald@gheskio.org


Abstr. Objective. @nbsp; We investigated whether there are long-lasting effects of exposure to single-dose nevirapine (sdNVP) treatment on virologic response to nonnucleoside reverse-transcriptase inhibitor (NNRTI)-based therapy among human immunodeficiency virus (HIV)-infected women. Methods. @nbsp; An observational epidemiologic study was conducted in Johannesburg, South Africa. Initial and sustained virologic response to NNRTI-based therapy was compared between 94 HIV-infected women who had received sdNVP 18-36 months earlier and 60 unexposed, HIV-infected women who had been pregnant 12-36 months earlier. Viral load was measured every 4 weeks up to week 24 and then every 12 weeks up to week 78. Time to viral suppression (viral load, <50 copies/mL) and confirmed rebound in the viral load (viral load, >400 copies/mL) were compared. Drug resistance was assessed using K103N allele-specific real-time polymerase chain reaction assay and population sequencing. Results. @nbsp; Almost all women (97.5% of sdNVP-exposed women and 91.3% of sdNVP-unexposed women; [Formula: see text]) achieved viral suppression by week 24, and similar percentages of sdNVP-exposed and -unexposed women (19.4% and 15.1%, respectively) experienced viral rebound within 78 weeks after treatment ([Formula: see text]). K103N was detected with the K103N allele-specific real-time polymerase chain reaction assay among sdNVP-exposed and -unexposed women before treatment; detection was strongly
predictive of inadequate viral response: 60.9% of women for whom K103N was detected in either viral RNA or DNA did not experience viral suppression or experienced viral rebound, compared with 15.1% of women for whom K103N was not detected ([Formula: see text]). After treatment, the M184V mutation occurred less frequently among sdNVP-exposed women than among sdNVP-unexposed women, but the frequency of NNRTI-associated mutations was similar between these groups of women with inadequate virologic response. Conclusions. Exposure to sdNVP in the prior 18-36 months was not associated with a reduced likelihood of achieving and sustaining viral suppression while receiving NNRTI-based therapy. However, women with minority K103N mutations before treatment had a reduced durability of virologic suppression.

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Abstr. Antiretroviral therapy (ART) is becoming increasingly more accessible within the health care system in Tanzania. However, the impact of the increased availability of ART on local conceptions about medicines, health and physical wellbeing has not been fully explored. In this article we examine how ART is constituted within local discourses about treatment and healing. Based on 21 focus group discussions with young people aged 14-24 years in a rural area (Kahe), we examine how local terms and descriptions of antiretroviral therapy relate to wider definitions about the body, health, illness and drug efficacy. Findings illustrate how local understandings of ART draw on a wider discourse about the therapeutic functions of medicines and clinical dimensions of HIV/AIDS. Therapeutic efficacy of antiretroviral medication appeared to overlap and sometimes contradict locally shared understandings of the clinical functions of medicines in the body. Implications of ART on bodily appearance and HIV signs may influence conceptions about sick role, perpetuate stigma and affect local strategies for HIV prevention. Structural inequities in access, limited information on therapeutic efficacy of ART and perceived difficulties with status disclosure appear to inform local conceptions and possible implications of ART. Policy and programme interventions to foster public understanding and acceptability of ART should emphasize treatment education about the benefits and limitations of therapy and increased access to ART in rural areas, and should integrate voluntary status disclosure and HIV prevention.

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Abstr. Background: Tuberculosis (TB) is the leading cause of death among HIV-infected patients worldwide. In KwaZulu-Natal, South Africa, 80% of TB patients are HIV coinfected, with high treatment default and mortality rates. Integrating TB and HIV care may be an effective strategy for improving outcomes for both diseases. Methods: Prospective operational research study treating TB/HIV-coinfected patients in rural KwaZulu-Natal with once-daily antiretroviral (ARV) therapy concurrently with TB therapy by home-based, modified directly observed therapy. Patients were followed for 12 months after ARV initiation. Results: Of 119 TB/HIV-coinfected patients enrolled, 67 (56%) were female, mean age was 34.0 years, and median CD4 count was 78.5 cells per cubic millimeter. After 12 months on ARVs, mean CD4 Count increase was 211 cells per cubic millimeter, and 88% had an undetectable viral load; 84% completed TB treatment. Thirteen patients (11%) died; 10 (77%) with multidrug-resistant or extensively drug-resistant TB. There were few severe adverse events or immune reconstitution events.
Adherence was high with 93% of study visits attended and 99% of ARV doses taken. Conclusions: Integration of TB and HIV treatment in a rural setting using concurrent home-based therapy resulted in excellent adherence and TB and HIV outcomes. This model may result in successful management of both diseases in other rural resource-poor settings.

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Abstr. Antiretroviral therapy (ART) has beneficial effects on mortality and lowers the incidence of diseases caused by opportunistic infections, such as tuberculosis (TB). Although ART has sustained long-term benefits, the risk of TB is high during the first 3 months after ART initiation. Among cases of ART-associated TB, we define "unmasked TB" as that which occurs in patients with reactivation disease who develop clinically recognizable TB after ART with the restoration of previously acquired TB antigen-specific functional immune responses. TB cases with clinical evidence of an inflammatory syndrome are a subset of these unmasked cases, which we define as "unmasked TB-immune reconstitution inflammatory syndrome." With more widespread use of ART in areas with a high prevalence of TB, unmasked TB will likely become more common. TB diagnostics with improved sensitivity and specificity are urgently needed to detect subclinical TB before it is unmasked.

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Abstr. Once-daily regimens of antiretroviral therapy are simpler than other regimens, but whether such regimens are associated with better adherence to treatment is controversial. We performed a meta-analysis of 11 randomized, controlled trials (total number of subjects, 3029), which revealed that the adherence rate was better with once-daily regimens (+2.9%; 95% confidence interval, 1.0%-4.8%; [Formula: see text]) than with twice-daily regimens. This modest effect was more pronounced at the time of treatment initiation and for regimens for which all medications were taken once per day.

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Abstr. Plasmodium falciparum malaria and human immunodeficiency virus (HIV)-1 adversely interact in the context of pregnancy, however little is known regarding the influence of co-infection on the risk of congenital malaria. We aimed to determine the prevalence of placental and congenital malaria and impact of HIV co-infection on transplacental malaria transmission in 157 parturient women and their infants by microscopy and by quantitative real-time polymerase chain reaction (PCR) in western Kenya. The prevalence of placental and cord blood infections were 17.2% and 0% by microscopy, and 33.1% and 10.8% by PCR. HIV co-infection was associated with a significant
increase in placental parasite density (P < 0.05). Cord blood malaria prevalence was increased in co-infected women (odds ratio [OR] = 5.42; 95% confidence interval [CI] = 1.90-15.47) and correlated with placental parasite density (OR = 2.57; 95% CI = 1.80-3.67). A 1-log increase in placental monocyte count was associated with increased risk of congenital infection (P = 0.001) (OR = 48.15; 95% CI = 4.59-505.50). The HIV co-infected women have a significantly increased burden of placental malaria that increases the risk of congenital infection.

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