AIDS BRIEFS

ANTIRETROVIRAL THERAPY REDUCES SOME OF THE RISK OF TB

Local research published in AIDS has shown that, while antiretroviral therapy significantly reduces the incidence of TB and restores immunity to TB mycobacteria, the immune restoration resulting from antiretrovirals is incomplete and most people with HIV will continue to have an increased risk of TB that will persist with long-term treatment. The authors of this paper reviewed epidemiological, clinical and laboratory data to reach their conclusions and believe that their findings could have major implications for TB control programmes.

Existing TB control is based on directly observed treatment of infectious TB, detected by sputum smear microscopy. This approach has not managed to control TB in countries where HIV is prevalent, mainly because infection with HIV makes detecting TB more difficult and because people with HIV who are exposed to TB are more likely to develop active disease relatively soon after exposure. The WHO has developed a framework for improving the control of TB wherever HIV co-infection is common, hoping that widespread use of antiretrovirals will be effective in reducing the incidence of TB. However, this had not yet been demonstrated, according to the authors of this study. This study summarises the available epidemiological, clinical and laboratory data that describe the effect of antiretrovirals on a person's immune response to TB. Antiretrovirals reduce the incidence of TB by 70 - 90% in treated patients, whether or not they live in areas with high or low TB incidence. Antiretrovirals also restore hypersensitivity responses to TB (often lost in untreated patients with advanced HIV), and increase the proportion of patients who have typical X-ray features of pulmonary TB (also lost in advanced HIV). Immune reconstitution disease associated with TB shows that there is a rapid, but uncontrolled, restoration of TB-specific immunity in the first 3 months of antiretroviral therapy because this therapy restores both the quantity and function of antigen-specific T-cells. However, the lower the CD4 count when antiretrovirals are started, the more limited the extent of possible immune restoration. Overall, the incidence of TB among patients on antiretrovirals remains higher than among those who do not have HIV infection.

The authors conclude that, despite the partially restored immune responses to TB in those on antiretrovirals, these drugs are unlikely to be an important part of TB control measures. While antiretrovirals reduce the frequency of TB in treated patients, they also greatly increase longevity and so the chances of contracting TB over the patient's lifetime. While not arguing against the integration of TB and HIV control programmes, the authors call for greater emphasis on strategies to optimise restoration of TB-specific immune function during antiretroviral therapy.

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CIRCUMCISION GOES SOME WAY TOWARDS PREVENTING HIV INFECTION

The first ever randomised controlled trial of male circumcision as an HIV prevention measure has shown that it can prevent at least 6 out of 10 female-to-male HIV infections. The evidence of the protective effect was so strong that the trial was stopped early. The trial, the first of 4 randomised controlled trials of circumcision being conducted in Africa, recruited 3 273 men aged 16 - 24 who were circumcised at the start of the trial or who were offered circumcision at the end of the trial 21 months later. The study was carried out among men living in Orange Farm, Johannesburg, where 70% of local men said that they would be willing to be circumcised if it could prevent HIV infection. Twenty per cent of men in the community were already circumcised.

HIV prevalence in the area is 31.6% of adults and in the trial population 90% of the men were sexually active at the start of the study, with a mean age of sexual debut of 16. HIV incidence was measured at 3 and 12 months and again at 21 months. All participants received intensive counselling on safer sex and the use of condoms. However, there were 51 HIV seroconversions in the control arm versus 18 in the circumcision arm – an HIV incidence of 2.2% and 0.77% respectively. In the control arm there were 9, 15 and 27 new infections at 3, 12 and 21 months and in the circumcision arm 2, 7 and 9. This is the first trial to demonstrate a strong protective effect of safe male circumcision. However, because it was a short-term study it cannot predict the long-term effect of circumcision.

Auvert B, *et al.* IAS Conference on HIV pathogenesis and treatment, Rio de Janeiro, Abstract TuOa0402, 2005.

Bridget Farham