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HIV treatment in prevention – PrEP

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The 6th IAS conference was held from 17-20 July 2011 in Rome. Although the conference is on HIV pathogenesis, treatment & prevention, the main focus this year was on the role of treatment in prevention. This can take different forms. First, by the immediate initiation on antiretroviral therapy (ART) after an HIV positive diagnosis, with a view to reducing a patient's viral load, and hence infectiousness, and thereby population HIV incidence. This approach was discussed in the June 2011 editorial, in the light of the publication of the results of the HPTN 052 study. This study showed that, if an HIV-positive person adheres to an effective ART regiment, the risk of transmitting the virus to an uninfected sexual partner can be reduced by 96% (1). A second option involves the use of a microbicide containing an antiretroviral (ARV). At lasts year's AIDS conference the results of the CAPRISA 004 trial were presented showing that a tenofovir -based microbicide gel is 39% effective in preventing HIV transmission in women (and more than 54% for women who used the gel regularly) (2). A number of trials are planned to support this first trial and one of these is the Follow-on African Consortium for Tenofovir Studies (FACTS) 001 trial (3). Finally, treatment as prevention can be in the form of pre-exposure prophylaxis (PrEP) whereby ARVs are used by individuals with a high risk of exposure to HIV infection.

In the June 2011 issue of the SACEMA Quarterly an article was devoted to the evaluation of the cost-effectiveness of PrEP and its impact on HIV-1 transmission in South Africa (4). This was based on the results of the iPrEP, showing that oral PrEP (Truvada, a combination of tenofovir and emtricitabine) reduces risk of infection by 44% among HIV-negative high-risk men who have sex with men (MSM). At a later stage the interim results of the FEM-PrEP trial showed that Truvada does not have a protective effect in women. But at the Rome 2011 IAS conference the results of two new studies (the Partners PrEP trial and the TDF2 trial) on the use of oral PrEP in heterosexual people were extensively discussed.

The Partners study compared tenofovir and Truvada versus placebo as PrEP in serodiscordant couples (one person HIV-positive, one negative) in Kenya and Uganda (5). The HIV-negative partner was female in 38% of the 4758 couples. The study found that tenofovir had an efficacy of 62% (95% CI 34% - 78%) (68% in women and 58% in men) in preventing HIV infection and Truvada an efficacy of 73% (95% CI 49% - 85%) (62% in women and 83% in men). None of the differences between men and women, or between tenofovir and Truvada, were statistically significant. The TDF2 study compared Truvada versus placebo in heterosexual men and women in Botswana (5). In this study, 45% of the 1200 participants were women. Truvada had an efficacy of 63% (95% CI 21.5 - 83.4) and was 78% (95% CI 41 - 94%) efficacious in patients who had last received study drugs less than a month previously and who therefore had pills available. Based on these results there does seem to be new hope for a role of PrEP in the prevention of HIV.

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