emtricitabine + tenofovir disoproxil for prevention of HIV infection in adolescents



POSSIBLY HELPFUL

The *emtricitabine + tenofovir disoproxil* combination has undergone inadequate evaluation as HIV prophylaxis in adolescents. However, based on extrapolation of the data obtained in adults, this option appears worth offering to adolescents whose sex practices place them at particularly high risk of contracting HIV infection. It is important to inform them that this treatment does not provide complete protection and to stress the importance of treatment adherence. They should also be strongly encouraged to use condoms and to undergo regular screening for sexually transmitted infections, including HIV.

TRUVADA° or other brands - *emtricitabine + tenofovir disoproxil* tablets

- **200 mg** of *emtricitabine* + **245 mg** of *tenofovir disoproxil* per tablet

■ **antiretrovirals; HIV nucleos(t)ide reverse transcriptase inhibitors**

■ **New indication**: in combination with safer sex practices for pre-exposure prophylaxis to reduce the risk of sexually acquired HIV-1 infection in adolescents at high risk.
[EU centralised procedure]

The main methods for preventing HIV transmission between serodiscordant partners who have penetrative sex are systematic condom use and antiretroviral treatment of the infected partner (1).

In seronegative adults at risk of sexually acquired HIV infection, in particular those who engage in high-risk sexual behaviours, the *emtricitabine + tenofovir disoproxil* fixed-dose combination (Truvada°, Gilead Sciences), taken continuously or only during periods of high-risk sexual activity, markedly reduces but does not eliminate the risk of contracting HIV infection. This HIV prophylaxis (known as pre-exposure prophylaxis or PrEP) should be combined whenever possible with other preventive measures and regular screening for sexually transmitted infections (1).

The *emtricitabine + tenofovir disoproxil* combination has been authorised in the European Union for the prevention of HIV infection in adolescents whose sex practices place them at high risk of becoming infected (2).

No comparative trials have been conducted in this situation. The evaluation is mainly based on a non-comparative trial conducted in the United States assessing daily use of *emtricitabine + tenofovir disoproxil* for 48 weeks by 79 boys aged 15 to 17 years whose sex practices in the previous 6 months placed them at high risk of contracting HIV infection from men (e.g. anal sex with at least 3 different partners, or with a partner known to be seropositive or of unknown HIV status without systematic condom use) (2,3). About half of the patients did not complete the trial, in most cases because they no longer wanted to participate or because they were lost to follow-up. Fewer than 25% of patients took the drug daily, according to the drug levels measured in their blood. Their sexual behaviour did not change significantly during the trial (3).

Three adolescents in the trial who were not lost to follow-up acquired HIV infection. All three were taking fewer than 2 tablets of the *emtricitabine + tenofovir disoproxil* combination per week (2).

In adults, a strong correlation has been found between preventive efficacy and treatment adherence, although cases of HIV infection have been reported despite well conducted PrEP (1,3,4). Furthermore, resistance to *emtricitabine* and to *tenofovir* has been reported in patients taking these drugs as prophylaxis without realising they were already infected with HIV. For these reasons, regular monitoring of HIV serological status is warranted in patients using PrEP (1).

Tenofovir can provoke renal and bone disorders. Little is known about their potential consequences in growing adolescents (2,5).

Drug-based prophylaxis can create a false sense of security, leading to riskier behaviour in patients who mistakenly believe that it confers complete protection (1).

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Literature search up to 5 February 2019

In response to our request for information, Gilead Sciences provided us with administrative documents.

1- Prescrire Editorial Staff "Emtricitabine + tenofovir disoproxil to prevent HIV transmission. For certain people at high risk of acquiring HIV infection" *Prescrire Int* 2017; **26** (187): 257-259.
2- EMA - CHMP "Public assessment report for Truvada. EMEA/H/C/000594/II/0135" 14 December 2017: 55 pages.
3- HAS - Commission de la Transparence "Avis-Truvada" 21 November 2018: 27 pages.
4- APM International "Premier cas documenté de contamination par un VIH non résistant chez un patient sous Truvada en PrEP" 22 September 2017: 2 pages.
5- Prescrire Rédaction "Inhibiteurs nucléosidiques ou nucléotidiques de la transcriptase inverse" Interactions Médicamenteuses Prescrire 2019.

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