EMA/99146/2018
EMEA/H/C/000594

Truvada (*emtricitabine / tenofovir disoproxil*)

An overview of Truvada and why it is authorised in the EU

What is Truvada and what is it used for?

Truvada is used in combination with at least one other HIV medicine to treat adults infected with human immunodeficiency virus type 1 (HIV-1), a virus that causes acquired immune deficiency syndrome (AIDS). In addition it may be used from the age of 12 in adolescents with HIV who are resistant to first-line treatments or who cannot take them because of side effects.

Truvada is also used to help prevent sexually transmitted HIV-1 infection in adults and adolescents who are at high risk of being infected (pre-exposure prophylaxis or PrEP). It should be used in combination with safer sex practices, such as use of condoms.

Truvada contains two active substances, emtricitabine (200 mg) and tenofovir disoproxil (245 mg).

How is Truvada used?

Truvada can only be obtained with a prescription, and treatment should be started by a doctor who has experience in the management of HIV infection.

Truvada is available as tablets. The recommended dose for treating or preventing HIV-1 infection is one tablet once a day, preferably taken with food. If patients with HIV-1 infection need to stop taking emtricitabine or tenofovir, or need to take different doses, they will need to take medicines containing emtricitabine or tenofovir disoproxil separately.

For more information, see the package leaflet.

How does Truvada work?

Truvada contains two active substances: emtricitabine, which is a nucleoside reverse transcriptase inhibitor; and tenofovir disoproxil, which is a 'prodrug' of tenofovir. This means that it is converted into tenofovir in the body. Tenofovir is a nucleotide reverse transcriptase inhibitor. Both emtricitabine and tenofovir work in similar ways by blocking the activity of reverse transcriptase, an enzyme produced by HIV that allows it to infect cells and make more viruses.

30 Churchill Place ● Canary Wharf ● London E14 5EU ● United Kingdom
Telephone +44 (0)20 3660 6000 **Facsimile** +44 (0)20 3660 5555
Send a question via our website www.ema.europa.eu/contact

For the treatment of HIV-1 infection, Truvada, taken in combination with at least one other HIV medicine, reduces the amount of HIV in the blood and keeps it at a low level. Truvada does not cure HIV infection or AIDS, but it may hold off damage to the immune system and the development of infections and diseases associated with AIDS.

For pre-exposure prophylaxis of HIV-1 infection, it is expected that Truvada in the blood will stop the virus from multiplying and spreading from the site of infection in case the individual is exposed to the virus.

Both active substances have been authorised in the European Union (EU) since the early 2000s: emtricitabine was authorised as Emtriva in 2003, and tenofovir disoproxil was authorised as Viread in 2002.

What benefits of Truvada have been shown in studies?

Two main studies have examined the effects of Truvada's active substances, emtricitabine and tenofovir disoproxil, in adults infected with HIV-1 who had not been treated before. The main measure of effectiveness was the proportion of patients whose HIV-1 level in the blood (viral load) had fallen below a defined level. Truvada's active substances, taken in combination with other antiviral medicines, reduced viral load in the majority of patients and were more effective than the comparator medicines.

The first study compared the combination of emtricitabine and tenofovir disoproxil with the combination of lamivudine and zidovudine (other antiviral medicines). Both combinations were taken with efavirenz (another antiviral medicine) by patients with HIV-1 infection. Of the patients taking the active substances of Truvada, 80% (194 out of 244) achieved and maintained viral load below 50 HIV-1 copies/ml by 48 weeks, compared with 70% of the patients taking the comparator medicines (171 out of 243).

The second study examined the effects of emtricitabine and tenofovir disoproxil, taken with lopinavir and ritonavir (other antiviral medicines) in 196 patients with HIV-1 infection. Around two-thirds of the patients achieved and maintained viral load below 50 copies/ml after 48 weeks.

The effectiveness of Truvada in adolescents was supported by studies showing that emtricitabine or tenofovir disoproxil reduced viral load when given with other antivirals to HIV-infected patients aged from 12 to 18 years, as well as evidence that the active ingredients are distributed similarly in the bodies of adolescents to those of adults and so would be expected to act in the same way.

Two main studies have evaluated the addition of Truvada to standard preventative measures for pre-exposure prophylaxis. In both studies Truvada was compared with placebo (a dummy treatment) in adults at high risk of sexually transmitted HIV-1 infection. The main measure of effectiveness was the number of adults who tested positive for HIV-1 infection. Truvada was more effective than placebo for preventing HIV-1 infection. The level of protection depended on how well individuals stuck to taking their medicine.

In the first study involving over 2,400 men who have sex with men, 3.9% (48 out of 1,224) individuals taking Truvada tested positive for HIV-1 infection compared with 6.8% (83 out of 1,217) individuals taking placebo.

The second study involved over 4,700 heterosexual couples, each with one partner who did not have HIV-1 infection and the other who had the infection. Of the individuals taking Truvada, 0.8% (13 out of 1,576) tested positive for HIV-1 infection over 1 year compared with 3.3% (52 out of 1,578) of those taking placebo.

What are the risks associated with Truvada?

The most common side effects in adults treated with Truvada are diarrhoea and nausea (feeling sick). When the active substances emtricitabine or tenofovir are given separately, the most common side effects (seen in more than 1 patient in 10) also include hypophosphataemia (low levels of phosphates in the blood), headache, dizziness, vomiting, rash, weakness and raised blood levels of creatine kinase (an enzyme found in muscles). In children, skin discoloration and anaemia (low red blood cell counts) are also common side effects. For the full list of all side effects reported with Truvada, see the package leaflet.

Truvada can be used for pre-exposure prophylaxis only in individuals who have been tested to be free of HIV infection. Individuals taking Truvada to prevent HIV-1 infection should be tested at least every 3 months to make sure that they are free of HIV-1. For the full list of restrictions, see the package leaflet.

Why is Truvada authorised in the EU?

The European Medicines Agency noted that the benefit of Truvada for treating HIV-1 infection has only been shown in patients who have not taken HIV treatment before, but that the simplified dosing regimen offered by the combination tablet taken once a day may help patients to stick to their treatment.

The Agency also considered that the benefit of Truvada has been shown for pre-exposure prophylaxis but the level of protection depends on how well individuals stick to the recommended dose schedule. There is a risk that pre-exposure prophylaxis may encourage risky behaviour but one of the main studies found that participation in the study reduced risky behaviour.

The Agency concluded that Truvada's benefits are greater than its risks and recommended that it be given marketing authorisation.

What measures are being taken to ensure the safe and effective use of Truvada?

The company that markets Truvada will provide an information pack to doctors which covers the risk of reduced kidney function with Truvada in adults and children, and information about use in adults for pre-exposure prophylaxis. Healthcare professionals will also receive a brochure and reminder card to hand out to individuals receiving Truvada for pre-exposure prophylaxis.

Recommendations and precautions to be followed by healthcare professionals and patients for the safe and effective use of Truvada have also been included in the summary of product characteristics and the package leaflet.

As for all medicines, data on the use of Truvada is continuously monitored. Side effects reported with Truvada are carefully evaluated and any necessary action taken to protect patients.

Other information about Truvada

The European Commission granted a marketing authorisation valid throughout the European Union for Truvada on 21 February 2005.

Further information on Truvada can be found on the Agency's website: ema.europa.eu/Find medicine/Human medicines/European public assessment reports.

This overview was last updated in 02-2018.