



HIV TRANSMISSION AND ANTIRETROVIRAL THERAPY BRIEFING SHEET

1. What is the risk of sexual HIV transmission for HIV positive people with undetectable viral load in the blood?

- HIV positive people that follow effective antiretroviral therapy can achieve undetectable viral load at certain stages of their treatment. It is established that when the viral load is undetectable in the blood, the risk of HIV transmission is significantly reduced.
- However there is still a small risk of sexual HIV transmission under these conditions, so it has always been recommended that HIV positive people on effective antiretroviral therapy continue to use condoms with sexual partners.
- Viral load must be undetectable not only in the blood but also in semen or vaginal fluid to realistically reduce the risk of HIV transmission.
- The link between viral load in blood and semen/vaginal fluid is not conclusive, as studies looking at this correlation have shown a wide variety of results.
- The association between viral load in blood and that in semen is affected by a variety of factors:

1. Sexually transmitted infections:

Infections such as gonorrhoea and chlamydia cause inflammation in the urethra which leads to increased levels of HIV found in semen. As a result, STIs increase in viral load in semen but not in blood.

2. Treatment adherence:

Anti-HIV therapy suppresses viral load in semen, but there is evidence that viral load is not always suppressed in blood and semen with equal efficacy. Poor adherence to anti-HIV therapy was associated with detectable HIV in semen in some studies.

3. Drug resistance:

Men who are treated with anti-HIV therapy can develop drug resistant HIV in their semen, and there is evidence of multi-drug resistant strains of HIV developing in the genital tract but not in the blood.

Summary: The risk of sexual HIV transmission is low for those on effective antiretroviral therapy with undetectable viral load. However questions remain about the link between

levels of viral load in blood and that in semen. Therefore the risk of sexual HIV transmission is not proven to be low enough to safely advocate abandoning condoms.

2. What is new about the evidence presented by the Swiss AIDS Federation?

The evidence reviewed by the Swiss doctors:

1. Longitudinal study released in 2005, of heterosexual discordant couples over 14 years. None of the partners of HIV positive people taking effective treatment became infected.

Even though the study demonstrated the ability of HIV therapy to reduce heterosexual transmission by 80%, the investigators caution that even a small increase in sexual risk-taking could cancel this out. They emphasised that “the main preventative measure for HIV sexual transmission remains the avoidance of risky sexual practices.”

2. A second longitudinal study of 93 discordant couples, where 41 HIV positive partners began treatment, and 6 HIV negative partners were infected with HIV. These 6 infections were all accounted for by their partner not following treatment effectively.

3. The San Francisco Men’s Health study showed that from 1994 to 1996, at a time when treatment was not yet available, the incidence of HIV by couple was 0.12. After 1996 when treatment was provided, HIV incidence of the men in the study dropped to 0.048, despite the fact that not all the men involved followed their treatment regime.

The Swiss Federal Commission for HIV/AIDS have stated that HIV positive people who are taking effective antiretroviral therapy, have an undetectable viral load and are free from STDs, are not sexually infectious. This view considers the existing evidence, but reaches a new conclusion. There is no *new* logic or evidence that has informed their position; it is simply a new interpretation of existing knowledge.

Their motivation for this statement is for the potential benefit of HIV positive people, in that they may be able to enjoy a more normal sex life without worrying that they will be endangering their sexual partner, and will be able to conceive children without assistance.

3. What should change in public health messages as a result of these findings? What new advice should be given?

The WHO and CDC have both released statements saying they will not be amending their recommendations for all HIV positive people to continue condom use regardless of treatment status.

As no new scientific evidence has been put forward, there is no compelling argument for changing public health messages until more research is done.

Sources:

Vernazza, P et al (2008) 'Les personnes séropositives ne souffrant d'aucune autre MST et suivant un traitement antirétroviral efficace ne transmettent pas le VIH par voie sexuelle' Bulletin des médecins suisses 89 (5)