Clinical reviews

Our panel of GPs review recent research papers in their specialist areas that may influence the way you practise

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Sexual health

Antiretroviral treatment in gay men minimises risk of HIV transmission

There is effectively zero risk of HIV transmission in gay men through condomless sex when HIV viral load is adequately suppressed, the findings of the PARTNER2 study, published in the *Lancet*, suggest.

People living with HIV who are on effective antiretroviral treatment (ART) can have suppressed viral loads which reduce the risk of HIV transmission. The risk of HIV transmission through condomless sex between serodifferent heterosexual couples (one partner HIV positive, the other HIV negative) has already been established in the PARTNER1 study.

The PARTNER study was conducted at 75 sites across 14 European countries. PARTNER1 followed up 548 heterosexual and 340 gay serodifferent couples who reported condomless sex from September 2010 to May 2014. PARTNER2 was an extension that recruited and followed up gay couples until April 2018.

PARTNER1 demonstrated that after 1,238 couple-years of follow-up in serodifferent heterosexual and gay couples, the HIV transmission rate was zero for both groups, but the upper 95% confidence interval (CI) was 0.46 per 100 couple-years in heterosexual couples compared with 0.84 in gay couples. This difference was due to fewer couple-years of follow-up in the latter group. PARTNER2 aimed to improve the precision of outcome analysis by extending the study period for gay couples and therefore the couple-years of follow-up.

Data about sexual behaviour, HIV testing (of the HIV-negative partner), and viral load (the HIV- positive partner – plasma HIV RNA had to be < 200 copies/ml at the most recent visit within past 12 months) were collected at baseline and every 4 to 6 months.

Any episode of seroconversion was investigated by anonymised phylogenic analysis to identify linked transmissions. Couples were censored if the negative partner reported use of pre- or post-exposure prophylaxis during follow-up. HIV transmission rate was reported as the number of linked HIV infections during eligible couple-years of follow-up.

There were 782 eligible gay couples who were enrolled and provided 1,593 couple-years of follow-up data (median 2.0 years, interquartile range IQR 1.1-3.5). Couples reported condomless anal sex a total of 76,088 times; 288 (37%) HIV-negative men reported condomless sex with other partners.

A total of 15 new HIV infections occurred during eligible follow-up but none of these were linked to the HIV-positive partner in the couple; which translated to an HIV transmission rate of zero (upper 95% CI 0.23 per 100 couple-years of follow-up). Overall, 24% of 779 HIV-negative men and 27% of 779 HIV-positive men reported an STI since their last visit.

This study suggests there is effectively zero risk of HIV transmission in gay men through condomless sex when HIV viral load is adequately suppressed. Together with evidence from the PARTNER1 study, the findings support the 'undetectable equals untransmittable' or U = U campaign, in which the risk of transmission of HIV when someone is taking ART and virally suppressed, is zero.

The investigators state: 'A sustained effort is required to increase rates of testing and HIV diagnosis with early initiation of ART and full support to maintain high levels of adherence.'

The evidence will help to support the benefits of earlier diagnosis and treatment. It will also reassure those who are newly diagnosed about the risk of transmission to other sexual partners following effective treatment.

DR RICHARD MA

Rodger AJ, Cambiano V, Bruun T et al. Risk of HIV transmission through condomless sex in serodifferent gay couples with the HIV-positive partner taking suppressive antiretroviral therapy (PARTNER): final results of a multicentre, prospective, observational study. *Lancet* 2 May 2019 https://doi.org/10.1016/S0140-6736(19)30418-0