

JOURNAL REVIEW

Use of hormonal contraceptives and risk of HIV-1 transmission: a prospective cohort study

Heffron R, Donnell D, Rees H, *et al.* Partners in Prevention HSV/HIV Transmission Study Team. *Lancet Infect Dis* 2012;12:19–26.

This prospective cohort study examined use of hormonal contraceptives and risk of HIV-1 transmission amongst 3790 heterosexual couples in seven African countries who were discordant for HIV-1 and who were participating in two longitudinal studies over 2 years. Women were classed as either users of hormonal contraception (most common method was the injectable, 11%) or non-users (no method, condoms, sterilised). HIV-negative partners were tested for HIV every 3 months, and in those testing positive, DNA sequencing for HIV-1 was conducted to determine if the HIV had come from the partner. In addition, HIV-positive women had endocervical swabs taken to measure of levels of HIV-1 RNA.

Among couples in whom the sero-negative partner was female, the rate of HIV acquisition was approximately doubled if the woman was a user of hormonal contraception and this was

statistically significant if an injectable user (odds ratio injectable vs. no hormonal method of 2.19; 95% confidence interval 1.01–4.74). Where the sero-negative partner was male, the risk of transmission was also increased if HIV-positive women used the injectable. Since more HIV-RNA was present in the endocervical swabs of HIV-positive women using the injectable, the authors suggested a possible adverse effect of this method on HIV-1 in the female reproductive tract.

The study's strengths include that it was able to adjust for many important confounders. However, contraceptive use, condom use and frequency of sex were self-reported and so this study has been criticised as being unable to exclude the possibility of different sexual behaviour between the groups. Greater condom use and less frequent sex than reported by non-users of hormonal contraception could artificially inflate the risk of HIV acquisition amongst hormonal contraceptive users. The validity of the endocervical swab data has also been criticised since the injectable affects cervical mucus consistency and so might render interpretation of viral concentrations difficult in this group.¹

The World Health Organization has concluded that currently available data neither establish a clear causal association with injectables and HIV acquisition, nor definitively rule out the possibility of an effect, and that more

research is required.² However, even if the injectable does increase the risk of transmission/acquisition of HIV, modelling studies have estimated that removing this contraceptive method from Africa would lead to 7600 annual additional unwanted births and 40 annual additional maternal deaths per 100 HIV infections averted.³

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Funding Sharon Cameron has received funding from Pfizer for research with Depo-Provera®.

Competing interests See Funding above.

Provenance and peer review Not commissioned; internally peer reviewed.

J Fam Plann Reprod Health Care 2013;39:171. doi:10.1136/jfprhc-2013-100616

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