Research Update: Do hormonal contraceptives increase the risk of HIV transmission among women?

By James Wilton

The results of a recent study generated a lot of media attention, suggesting that women who use hormonal contraceptives, in injection form, are at an increased risk of becoming infected with HIV and transmitting HIV to others. We don’t think there is enough conclusive evidence available to change our messaging to women about hormonal contraceptives, but these results are concerning and emphasize the need for more research in this area.

Use of hormonal contraceptives in Canada

Hormonal contraceptives are a popular method of reducing the risk of unplanned pregnancy in Canada. Oral contraceptive pills, more commonly called birth control pills, are taken daily and normally contain both progesterone and estrogen. Hormonal injections, commonly known as Depo-Provera, contain progesterone alone and are given once every three months. A national survey in 2006 found that among women who reported using contraception, approximately 44% used the oral contraceptive pill and 2.5% used hormonal injections.

What did the recent study show?

A recent study found that HIV-negative women in Eastern and Southern Africa who used Depo-Provera were two times more likely to become infected with HIV, compared to women who did not use Depo-Provera. The study also found that HIV-positive women who used Depo-Provera were two times more likely to pass HIV on to their partners. There were not enough women in the study using birth control pills to make any conclusions about this contraceptive method.

How might hormones increase the risk of HIV transmission?

Research in the laboratory suggests that progesterone can cause changes to the vaginal lining, which may increase a woman’s susceptibility to HIV infection. For example, progesterone can decrease the thickness of the vaginal lining, making it easier for HIV to cross the lining and enter the bloodstream.

Research also shows that progesterone can increase the amount of virus (or viral load) in the vaginal fluid of women living with HIV. This may explain why women living with HIV who use hormonal contraceptives appear more likely to transmit HIV to others.

Contradictory results

Although this recent study—and others—suggests that hormonal contraceptives increase the risk of HIV transmission, other studies have found that hormonal contraceptives did not increase the risk of HIV infection. Of those studying Depo-Provera, five studies suggest that it increases the risk of HIV infection among HIV-negative...
women, while seven others did not. Of the studies looking at birth control pills, only two have suggested that birth control pills increase the risk of HIV infection, while 10 others have not.

The recently completed study was the first to suggest that Depo-Provera may increase the risk of an HIV-positive woman transmitting HIV to her partner(s).

**Difficult to make any conclusions**

The conflicting evidence makes it difficult to come to definite conclusions about the relationship between using hormonal contraceptives and an increased risk of becoming infected with HIV and transmitting HIV to others. Further, none of the completed studies were randomized controlled trials, which means that it is difficult to know for sure whether or not hormonal contraceptives increased the risk of transmission among women. For example, women using hormonal contraceptives may be more likely to share characteristics that put them at a higher risk of becoming infected with HIV or transmitting HIV, such as having more sexual partners or using fewer condoms. Also, most of the completed studies did not confirm whether women who reported using hormonal contraceptives actually used them.

**The verdict**

The evidence investigating the link between hormonal contraceptives and HIV transmission is inconsistent and limited. Consequently, the question of whether hormonal contraceptives increase the risk of HIV transmission remains unanswered and may require further research. It should be noted that studies that do suggest that hormonal contraceptives increase the risk of HIV transmission are not particularly relevant to women in Canada since most of these studies investigated Depo-Provera, which is not widely used in Canada.

Women using contraceptives to reduce their chances of becoming pregnant may want to consider the use of condoms to reduce the risk of becoming infected with HIV or STIs (or transmitting HIV if they are HIV-positive).

A recent consultation was held on this topic by WHO/UNAIDS at the beginning of February, 2012. After reviewing the evidence, they determined that the data were not sufficiently conclusive to change current guidance—women living with HIV, or at high risk of HIV, can continue to use hormonal contraceptives to prevent pregnancy, but emphasized the need to also use condoms to prevent HIV acquisition and transmission.

**References**


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