Safety of hormonal and intrauterine methods of contraception for women with HIV/AIDS: a systematic review

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CRD summary
The authors concluded that evidence about the safety of hormonal and intrauterine contraceptive use among HIV-infected women remained limited but was generally reassuring in terms of adverse health effects, disease transmission to uninfected partners and disease progression; however, one trial raised concerns about enhanced disease progression among women using hormonal contraception. The authors’ conclusions are suitably cautious and appear appropriate.

Authors’ objectives
To assess whether human immunodeficiency virus (HIV) infected women who use hormonal or intrauterine device (IUD) contraception are at an increased risk of HIV disease progression, other adverse events or HIV transmission to uninfected sexual partners.

Searching
PubMed was searched to August 2009 for articles published in peer-reviewed journals. There were no language restrictions. Search terms were reported. Reference lists of retrieved articles and review articles were searched.

Study selection
Clinical trials and observational studies that evaluated use of hormonal or intrauterine contraceptives in HIV-infected women were eligible for inclusion. Studies had to report HIV progression, other adverse health events or sexual transmission to uninfected partners.

Included studies considered combined oral contraceptive, depot medroxyprogesterone acetate, hormonal contraceptive and intrauterine devices in HIV-infected women. Women who were post-partum, post-abortion and commercial sex workers were included. Study designs included randomised controlled trial (RCT), cohort, cross-sectional, before-and-after study and descriptive. Outcomes reported included cervical HIV, shedding of HIV RNA (ribonucleic acid), CD4 cell count (CD4 is a glycoprotein on the surface of helper T cells that serves as a receptor for HIV), changes in HIV RNA, rate of sexually transmitted diseases (STD), bleeding, side effects and pelvic inflammatory disease (PID).

The authors did not state how many reviewers performed study selection.

Assessment of study quality
Study quality was assessed using the United States Preventive Services Task Force scale. The authors stated that all authors were involved in assessing the evidence.

Data extraction
Data were extracted on HIV disease progression outcomes, adverse health outcomes and HIV infectivity. The authors stated that all authors were involved in assessing the evidence.

Methods of synthesis
A narrative review was undertaken. Studies were grouped according to outcome reported: HIV disease progression outcomes (CD4 cell count, change in HIV RNA, HIV-related death, eligible for starting anti-retroviral therapy); adverse health outcomes (incidence of STDs, PID, bleeding, side-effects); and HIV infectivity (cervical HIV, seroconversion to male partner, HIV shedding).

Results of the review
Twenty-four studies were included in the review (n=10,395 participants), only one of which was an RCT. The number of participants in the included studies ranged from six to 4,109. Most studies were conducted in low-income countries. Most studies were deemed poor or fair quality; only one study was deemed good quality.
HIV disease progression (nine studies, n=7,633): Eight observational studies found no effects of hormonal or intrauterine contraceptives on HIV disease progression measures, which included CD4 cell count, HIV RNA levels and survival. One RCT found that compared with copper IUD, hormonal contraceptive users had a significantly increased risk of falling below a CD4 cell count of 200 cells/μL or death.

Adverse health outcomes (10 studies, n=1,991): Three observational studies found an increased risk of STDs with hormonal contraceptive; one observational study found no difference. Two studies that examined PID found no effect with copper IUDs. Two studies of LNG-IUD found no adverse events. Two studies found no adverse effects apart from irregular bleeding with Norplant users.

HIV infectivity (10 studies, n=1,613): One study found no effect of oral contraceptives or copper IUD on female to male transmission. Seven studies examined the influence of hormonal contraceptive use on HIV-1 DNA or RNA shedding and showed mixed effects of contraceptive use. Four studies of copper IUDs showed no increase in viral shedding.

Authors’ conclusions
Evidence on the safety of hormonal and intrauterine contraceptive use among HIV-infected women remained limited, but was generally reassuring in terms of adverse health effects, disease transmission to uninfected partners and disease progression; however, one RCT raised concerns about enhanced disease progression among women who used hormonal contraception.

CRD commentary
Inclusion criteria for the review were broadly defined and one relevant database was searched without language restrictions. Unpublished studies were not searched for and publication bias was not assessed, which may have introduced bias into the review. The authors did not state whether study selection, data extraction and quality assessment were conducted in duplicate, but did state that all authors were involved in assessing the evidence. The quality assessment was based on a validated tool and indicated the poor quality of the included studies (acknowledged by the authors). Studies were narratively synthesised, which was appropriate.

The authors’ conclusions are suitably cautious and appear appropriate.

Implications of the review for practice and research
Practice: The authors stated that the World Health Organisation (WHO) recommended that women with HIV/AIDS can use hormonal contraceptives and can generally use intrauterine contraception, with the exception that women with AIDS who are not clinically well on ART should not undergo IUD insertion.

Research: The authors did not state any implications for research.

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