Hormonal contraception does not appear to increase HIV risk

December 7 2006

Using hormonal contraception does not appear to increase women's overall risk of infection with the AIDS virus, report the authors of a large study commissioned by the National Institute of Child Health and Human Development of the National Institutes of Health.

The study, published on the Web site of the journal AIDS, is the largest, most comprehensive of its kind to date. It followed thousands of women in Africa and compared their patterns of contraceptive use to their risk of infection with HIV.

The NIH project officer for the study, H. Trent MacKay, M.D., M.P.H, Chief of the Contraception and Reproductive Health Branch, said the study findings do not provide a basis for changing current recommendations regarding contraceptive use.

Dr. MacKay cautioned that, although hormonal contraception provides an effective means of pregnancy prevention, it does not protect against HIV or other sexually transmitted infections. Abstinence is the only sure way to prevent sexual transmission of HIV, he said. Barring abstinence, use of a latex condom, consistently and correctly, is highly effective against HIV infection.

More than 100 million women around the world use hormonal contraception, the study authors wrote. In all, 18 million women have been infected with HIV, most during heterosexual relations. "Understanding whether hormonal contraceptive use alters the risk of

HIV acquisition among women is a critical public health issue," the study authors wrote.

The researchers studied use of the most commonly prescribed forms of hormonal contraception: combined oral contraceptives, containing estrogen and progestin, and depot-medroxyprogesterone acetate (DMPA), an injected contraceptive containing progestin only.

Numerous studies have considered the issue of whether contraceptives might increase a woman's risk of becoming infected with HIV. The results of these studies, however, are inconclusive. The current study was commissioned by NIH's National Institute of Child Health and Human Development to overcome many of the limitations of the previous studies. It was conducted primarily among women seeking family planning services (rather than among high-risk women such as sex workers) who more closely resemble the vast majority of women using hormonal contraception worldwide.

The researchers undertook the study in Africa and Asia because those parts of the world had a very high incidence of HIV infection at the time the study was being planned. Because there are comparatively fewer new cases of HIV infection in the United States, any U.S.-based study would take far longer to provide results.

Charles Morrison, Ph.D., at Family Health International, in Research Triangle Park, North Carolina, led the study, along with colleagues from Fred Hutchinson Cancer Research Center in Seattle. The study was conducted in Uganda, Zimbabwe, and Thailand, in collaboration with researchers at Case Western Reserve University, in Cleveland, Ohio, the University of California San Francisco, and the Johns Hopkins University in Baltimore.

For the study, the researchers primarily recruited women at family

planning clinics in Uganda, Zimbabwe, and Thailand. The women ranged in age from 18 to 35 years and were not infected with HIV at the time they were recruited.

At the time they enrolled in the study, the women were either using no hormonal contraception, or had used oral contraceptives or DMPA for at least three months before the study began. Women who were not using hormonal contraception used such methods as condoms alone, diaphragms and spermicides, sterilization, withdrawal, or periodic abstinence (the rhythm method), or used no method of contraception.

In the study, women seeking care were offered their choice of contraceptive methods, either oral contraceptives or DMPA, as well as condoms. The women were counseled on how to use these methods and how to reduce their risk of becoming infected with HIV. The researchers also examined the women for sexually transmitted infections, and offered them treatment, if they needed it.

In all, 6,109 women participated in the study: 2,235 in Uganda; 2,296 in Zimbabwe; and 1,578 in Thailand. The women were tested for HIV four to five times a year, for 15 to 24 months.

By the time the study had ended, 213 African women had tested positive for HIV. In contrast, only four Thai women had become HIV-infected. This appears to be primarily because the Thai government mandated the use of condoms in the country's brothels during the 1990s, greatly reducing the heterosexual spread of HIV. Because there were too few cases in Thailand for a valid statistical interpretation, the researchers excluded the Thai cases from the final analysis.

When the researchers considered all of the 213 African HIV cases together, they found no evidence that use of hormonal contraceptives increased a woman's chances of becoming infected with HIV. "There

was no statistically significant difference in the risk of HIV acquisition between users of combined oral contraceptives or DMPA and women not using hormonal contraception," said Dr. Morrison.

The authors noted that their study could not rule out an increase in risk for HIV infection among certain populations of "highly exposed" hormonal contraceptive users—those already at higher than normal risk of acquiring HIV, such as sex workers. The authors added that the study results were "not inconsistent with" a modest increase in risk for HIV infection associated with hormonal contraceptive methods, particularly for DMPA, which was seen in a study among high risk women in Kenya.

Among women who had genital herpes at enrollment, hormonal contraception did not increase the risk of acquiring HIV. However, among women without herpes at enrollment, hormonal contraception did increase the risk of acquiring HIV when compared with the women who did not have herpes at enrollment and who did not use hormonal contraception. The researchers wrote that a biological explanation for this finding remained "elusive," and said additional research is needed to confirm and explain it. Previous studies have found genital herpes was a risk factor for acquiring HIV.

"In summary, this large, multi-site study found no overall increased risk of HIV acquisition associated with hormonal contraceptive use," the study authors wrote. "This provides reassurance for women in moderate and high HIV prevalence settings who need effective contraception that any increased overall risk associated with hormonal contraception is, at most, modest."

Source: NIH/National Institute of Child Health and Human Development