

# Fertility and Contraception among HIV-positive Women

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**ABSTRACT**

**Study Aims:** To assess the fertility and contraceptive choices among HIV-positive women, and to assess whether the severity of HIV disease influences these choices.

**Methods:** In the Spring of 2004, 100 HIV-positive women, age 18-45, from a University HIV Clinic, completed a survey on their reproductive history and use of contraceptive methods. We excluded prisoners, non-English speakers and pregnant women. We reviewed their medical records for contraceptive methods, antiretroviral medications and HIV/AIDS diagnoses including CD4 counts and HIV RNA levels. We performed descriptive analysis of population characteristics, and a logistic regression model to predict their desire to have future children.

**Results:** Subjects had a median age of 37, 53% were black, 32% White and 9% Hispanic. Forty nine percent were never married, over half were in a long-term monogamous relationship, and 60% had an HIV-negative male partner. Fifty-three percent had AIDS, with an average of 9 years since diagnosis. Median CD4 count was 471 and 51% had a HIVRNA <1000 copies. Sixty-five percent were on antiretroviral medications. Reported condom use increased significantly after HIV diagnosis and of those not sexually abstinent, 89% were currently using condoms. Ninety-one percent had borne children. Fifty-one percent had been sterilized, compared to 28% in the general population. Of those who were sexually active but not sterilized, 91% were using reversible contraception. One-third of subjects were considering future children, including 22% of those who had been sterilized. In a multivariable analysis, higher current CD4 count and current non-use of antiretroviral medication were associated with a desire for future childbearing.

**Conclusions:** In this clinic setting, HIV-positive women have reproductive patterns similar to HIV-negative women, with most having borne children and many wanting children in the future. They report high condom use, especially following HIV diagnosis. A high proportion have been sterilized and express sterilization regret, with 22% wanting future children. Potent antiretroviral therapy has greatly improved the outlook for HIV-infected women, even those with an AIDS diagnosis. Since one-third of these HIV-positive women want to have future children, counseling about reversible methods of contraception must be encouraged.

**BACKGROUND**

Women who are infected with HIV need contraception for the same reasons as other women: to prevent unintended pregnancies. HIV-infected women are now living longer, healthier lives, and may have a different outlook on future family planning. Little is known about whether HIV-infected women in care desire more children, and what factors influence this decision.

**METHODS**

From January through June of 2004, we recruited 100 HIV-positive women from the Infectious Diseases Clinic at the University of Rochester Medical Center. This clinic is staffed by ID specialists and has 843 HIV-positive patients in care with 36% women. Each subject received \$5.00 reimbursement for completing a short questionnaire. The Research Subjects Review Board at the University of Rochester approved this study protocol.

**Subject Inclusion:**

- Age 18 to 45
- Presenting for HIV care
- Fluent in English
- Not incarcerated or pregnant

**Survey Instrument:**

- 8-page, 60-question written survey
- Demographics
- Reproductive history and plans
- Contraceptive experience and use
- Condom use

**Chart Review:**

- Current/past contraceptive use
- History of sterilization
- Current HIV medications
- Most recent HIV viral load
- Most recent and lowest CD4 count
- Stage of HIV/AIDS disease

**Data Analysis:**

- Descriptive analysis of characteristics
- Bivariate analyses of demographic and HIV disease factors associated with desire for future childbearing
- Logistic regression model to predict desire to have future children.

**Table 1. Subject Characteristics, N=100**

Demographics	Mean Age	37 years old (21 - 45)
	Race	53% Black, 32% White
	Working outside the home	34%
HIV Disease	Diagnosed after 1996	60%
	Years since HIV diagnosis	9 (0.8 – 18)
	Mean CD4	471 (18 – 1,348)
	Viral load <1,000	51%
	HIV acquired heterosexually	80%
	Prior AIDS diagnosis	53%

**Table 2. Contraceptive & Reproductive Characteristics, N=100**

Reproductive History	Have had children	91%
	Have had an abortion	39%
	One main partner >2 years	51%
	Partner status HIV-positive	31% (22/71)
Contraceptive Use	Sterilized	56%
	Condoms & Sterilized	32%
	Sterilized only	15%
	Abstinent and sterilized	9%
	Condoms only	23%
	Abstinent	8%
	Condoms & Hormonal	7%
	Hormonal only	3%
	None	3%

**Table 3. Reproductive Plans and Sterilization**

Want future children	33% (33/99)
Sterilized but may want future children	21% (12/56)
Sterilized after HIV diagnosis but may want future children	25% (4/16)

- We found a high rate of tubal regret in this population.

**Table 4. Contraceptive Method for Subjects on Efavirenz, N=23**

Method	% (N)
Condoms only	13% (3)
Hormonal only	4% (1)
Condoms and hormonal	4% (1)
Sterile	78% (18)

- Efavirenz is a non-nucleoside reverse transcriptase inhibitor with a concerning risk for teratogenic effects. It now has an FDA pregnancy category D.

**Table 5. Predictors of Wanting Future Children**

	OR (95% CI)	p value
Not on HIV meds vs. On HIV meds	13.11 (1.31, 131.28)	0.029
Non-White race vs. White race	6.90 (1.05, 45.43)	0.044
Fewer years since diagnosis (in years)	1.25 (1.03,1.45)	0.017
Younger age (in years)	1.22 (1.03, 1.45)	0.020
Higher current CD4 (in counts per ml)	1.01 (1.00, 1.01)	0.001
Higher nadir CD4 (in counts per ml)	1.01 (1.00, 1.02)	0.011
HIV RNA ≤400 vs. >400	0.11 (0.01, 1.36)	NS

- OR of wanting future children vs not, as determined in a multivariable model, adjusted for other covariates in the model. In the logistic regression model, six of the seven variables remained significantly associated with the desire for future children.

**DISCUSSION**

- 91% had children and 33% wanted children in the future.
- 56% had been sterilized, 21% of whom desired to have children in the future. This rate of tubal regret is higher than in the general population, where 13% of women regret their sterilization later in life.
- While most subjects on efavirenz had been sterilized, 13% are using only condoms which have a typical first year pregnancy rate of 14%.
- The predictors of wanting future children were: not being on HIV medication, Non-White race, younger age, shorter time since HIV diagnosis, higher current CD4, and higher nadir CD4.

**CONCLUSIONS**

- Since many HIV-positive women in care want children in the future, we need to counsel them on effective reversible methods of contraception.
- Permanent sterilization with tubal ligation may be overused in this population given the high rate of tubal regret.