Contraceptive Use and Missed Opportunities for Family Planning Discussions in Women Living with Human Immunodeficiency Virus at an HIV Clinic

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Abstract

The objective of this study was to examine contraception use and family planning discussions (FPD) in female people living with HIV (PLWH). A retrospective cohort study was conducted. Female PLWH were included if they were 18–44 years and received care in 2019 at an HIV clinic. 74 patients met inclusion; mean age was 35 years, 53% were white. All patients were prescribed antiretroviral therapy. 48.6% of patients had documented FPD. 64.9% of patients were using contraception; sterilization was most common (41.7%). Only five patients had a contraindication to hormonal contraception. No differences in contraception use were observed based on age, race, HIV viral load, number of visits, or past pregnancies. However, patients with documented FPD were more likely to use contraception (OR 4.55; 95% CI 1.35-15.29). Routine FPD and contraception use in female PLWH were low. Rates of sterilization were high in female PLWH. Providing quality family planning services is critical to increase contraception use and selection of the most appropriate contraception form.

Keywords

HIV infection, contraception, women, family planning, contraceptive behavior

Introduction

In 2018, there were approximately 61 million women between the ages of 15–44 years in the United States (US).[1] However, only 60% reported using some form of contraception method.[1] In the US the oral contraceptive pill is the most commonly used form of contraception, followed by female sterilization.[2] Current contraceptive use is lower among black women and women aged 15–24 years compared with women aged 35–44 years. In the general population, language proficiency and comprehension of information received about the health system has been shown to influence the utilization of reproductive services.[3]

As of 2018, there were approximately 245,000 women in the United States with HIV, with Black and Hispanic/Latino patients disproportionately affected.[4] Additionally, there were 7000 new HIV diagnoses in women; 4000 of these women were considered to be of reproductive age (15-44 years).[4]

Approximately 70% of female patients with HIV (PLWH) are sexually active but use of effective contraception is variable and unintended pregnancy is frequently reported (>50%).[5]

It was previously demonstrated that marital status and level of education in female PLWH were significant factors in contraceptive use.[6] Those patients with higher education and/or in

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monogamous relationships use contraception more frequently.[6] Male condoms have been reported to be the most regularly used type of contraception in female PLWH, but condom use has been shown to be variable.[7] In addition, male condoms have a significant higher user and method failure rate compared to longer-acting contraception methods.[6] Oral, injectable, implants, and intrauterine devices are all acceptable contraceptive choices for female PLWH without medical contraindications. The World Health Organization recognizes that informed choice of the wide range of contraceptive methods is an essential element of optimal and quality family planning care..[8] The objective of this study was to examine contraception use and FPD in female people living with HIV (PLWH) receiving primary care at an HIV outpatient clinic.

Materials and Methods

This study was a retrospective chart review evaluating contraceptive use in adult women of childbearing age with HIV. The study protocol was approved by the institutional review board. Patients were included if they were female (natal sex), between the ages of 18–44 years, had a diagnosis of HIV, and received care at the outpatient HIV clinic between January 1, 2019 through December 31, 2019. Study data was collected from the patients' electronic medical records (EMR). This included demographics, medications, laboratories, sexual history, number of prior pregnancies, contraception use, FPD, and contraindications to contraception. Contraindications were defined as category 4 conditions by the US Medical Eligibility Criteria for contraceptive use.[9] Hormonal type contraception included depot medroxyprogesterone acetate, combined hormonal oral contraceptives, progestin-only pill, hormonal implant, patch, or ring, and levonorgestrel-releasing intrauterine device. The Lexicomp® Interactions drug interaction software was utilized to identify potentially serious drug interactions (ie, category D and X).

Descriptive statistics were used to describe the baseline characteristics and demographics of the study population. Contraceptive use in adult female PLWH of childbearing age was reported dichotomously (contraception use/no contraception use). Categorical variables were analyzed utilizing the chi-square test, and continuous variables were analyzed using Student's t-test. Logistic regression was used to determine predictors of contraception use. Statistical significance was defined by a $p < 0.05$. All statistical tests were performed using IBM SPSS Statistics Version 28.

Ethical Approval and Informed Consent

The study protocol was approved by the ethics institutional review board through the Human Research Protections Office at the University of New Mexico Health Sciences (IRB study #20-271). Due to the retrospective nature of this project, the study met requirements for an expedited review. No patient consent was required for the retrospective chart review. All data was de-identified during data collection.

Results

In 2019 the clinic saw 1117 PLWH; women accounted for 13.5% of the clinic population. Of the 151 female PLWH seen in 2019, a total of 74 met the study inclusion criteria. The mean age of the study population was 35 years; 53% of patient were white and 82% were English-speaking. Eighty-four percent of female PLWH had an undetectable viral load (<50 copies/mL). The majority (81.1%) of patients were prescribed an integrase strand transfer inhibitor-based regimen. Table 1 describes the baseline characteristics of the patient population.

Overall, 71.6% of study patients reported being sexually active. However, only 46 patients (62.2%) were currently using some form of contraception. In patients with detectable HIV viral loads (n = 20), 35% of patients were not using any form of contraception. The most common forms of current contraception reported were sterilization/removal of reproductive organs (41.7%; n = 20) and condom use (16.7%; n = 8) (Figure 1). FPD with a provider within the last year were only documented for 48.6% of patients. Family planning discussions were only documented in three of the 12 patients (25%) with detectable viral loads. Multivariate analyses found that only documented FPD were associated with contraceptive use (Figure 2).

The contraceptive type (ie, hormonal vs non-hormonal) used was dependent on age. For women with HIV < 35 years of age, 71.4% used hormonal contraception compared to only 20.0% of patients ≥35 years of age ($p < 0.001$). Increasing age was associated with sterilization (OR 1.23, 95% CI 1.10-1.38; $p < 0.001$). The rates of hormonal contraception use were lower in Hispanic and non-English speaking patients; however, our sample size was small and the differences were not statistically significant. Race, current tobacco use, BMI, hypertension, prior pregnancy, undetectable HIV viral load, number of clinic visits, family planning discussion, and sexual activity were also not associated hormonal versus non-hormonal contraception type.

Contraindications to hormonal contraception were identified in three patients, which included vascular disease or elevated blood pressure (systolic ≥160 or diastolic ≥100); one patient was using hormonal contraception, one patient was using non-hormonal contraception and one was not using contraception. In two separate patients, category D drug-drug interactions were identified between darunavir/cobicistat/emtricitabine/tenofovir alafenamide and hormonal contraception that contained ethinyl estradiol, may result in decreased serum concentrations of hormonal contraceptives and increase risk for pregnancy.

Discussion

The results of this study demonstrated that contraceptive use in our population of female PLWH is low, despite access to free condoms and hormonal contraception. Although the overall use of contraception is similar to that reported in the general

Table 1. Patient Characteristics (n = 74).

Female, n (%)	74 (100)
Mean age, years ± SD	35.26 ± 6.97
Mean height, cm ± SD	162.05 ± 6.14
Mean weight, kg ± SD	78.75 ± 18.70
Race, n (%)	
American Indian/Alaska Native	13 (17.6)
Asian	1 (1.4)
Black	16 (21.6)
White	39 (52.7)
Declined to answer	5 (6.8)
Ethnicity, n (%)	
Hispanic or Latino	32 (43.2)
Not Hispanic or Latino	39 (52.7)
Declined to answer	3 (4.1)
Comorbidities, n (%)	
Diabetes	4 (5.4)
Hypertension	3 (4.1)
Alcohol abuse	10 (13.5)
Substance abuse	17 (23.0)
Hepatitis C infection	5 (6.8)
None	26 (35.1)
Other	26 (35.1)
Smoking n (%)	
Current smoker	24 (32.4)
Non-smoker	40 (54.1)
Former smoker	7 (9.5)
Unknown	3 (4.1)
Language n (%)	
English speaking	60 (82.2)
Non-English speaking	13 (17.8)
Mean years living with HIV, years ± SD	8.04 ± 6.96
Mean CD4 count, cells/mm^3 ± SD	712 ± 401
Viral load, n (%)	
Undetectable (<20 RNA copies/mL)	54 (73)
Detectable	20 (27)
Antiretroviral therapy*, n (%)	
INSTI-based	60 (81.1)
PI-based	6 (8.1)
NNRTI-based	7 (9.5)
Other	3 (4.1)
No ART prescribed	0 (0)
Patient sexually active, n (%)	
Yes	53 (71.6)
No	6 (8.1)
Unknown/Not reported	15 (20.3)
Past pregnancy, n (%)	
Yes	63 (85.1)
No	11 (14.9)
Unknown	0 (0)
Mean number of clinic visits within 12 months, n ± SD	4.82 ± 2.86
Reported STI screening within 12 months, n (%)	
Yes	59 (79.7)
No	15 (20.3)
STI within 12 months, n (%)	
Chlamydia	4 (4.1)
Gonorrhea	2 (2.7)

(continued)

Table 1. (continued)

PID	0 (0)
Genital warts	0 (0)
Genital herpes	10 (13.5)
Syphilis	4 (5.4)
None	43 (58.1)
Not tested	14 (18.9)

SD = standard deviation
*NNRTI-, PI-, INSTI-based treatments include only combinations of these anchor drug classes with 2 NRTIs. The group "other" includes other drug classes combinations such as: PI + INSTI without or with 2 NRTIs or 1 NRTI; PI + INSTI + NNRTI without or with 2 NRTIs; PI + NNRTI with 1 or 2 NRTI(s); PI + 1 NRTI; INSTI + 1 NRTI.

population, a difference was seen in the types of contraceptive methods used. Sterilization was used most frequently in our population of female PLWH and was twice the rate reported in the general US population. Our results in female PLWH are similar to those previously reported by Stanwood and colleagues,[10] where sterilization was reported in 47% of female PLWH. In this study a larger percentage of female PLWH also reported regret after being sterilized, compared to that previously reported in the general population.[10, 11] Effective reversible hormonal alternatives were rarely used in our population, despite few contraindications or drug interactions with antiretrovirals. Condoms were also a popular contraceptive method in our cohort, but are less effective than other contraceptive options.[12] Condom use was also previously reported as the most common form of contraception in the Swiss HIV Cohort Study, resulting in unintended pregnancies.[13]

Patients from this study rely on the HIV-specialty clinic for most of their health care and primary care needs, including gynecological exams. It is unlikely that the female patients in this study were receiving these services elsewhere. For female PLWH, care should encompass family planning services. Contraceptive care may be managed like a chronic condition, in which patients receive regular follow-up to assess their reproductive life plans and contraceptive options, as this may change over time.

Stigma, misinformation, and concerns about privacy and contraceptive safety in female PLWH, by both patients and health care providers, appear to be barriers to contraceptive use, as well as contraceptive type.[14–16] In one study that included black female PLWH, family members were identified as reproductive decision influencers, resulting in the use of less effective methods (eg, condoms) after their HIV diagnosis.[17] This reinforces the importance of health care providers delivering reliable information on the many contraceptive choices available to patients.

Our study demonstrated that FPD with providers were associated with increased contraception use. It is important to note, however, that FPD were not associated with the type of contraception used. This suggests that providers did not influence patient choice about the type of contraception used, but rather encouraged
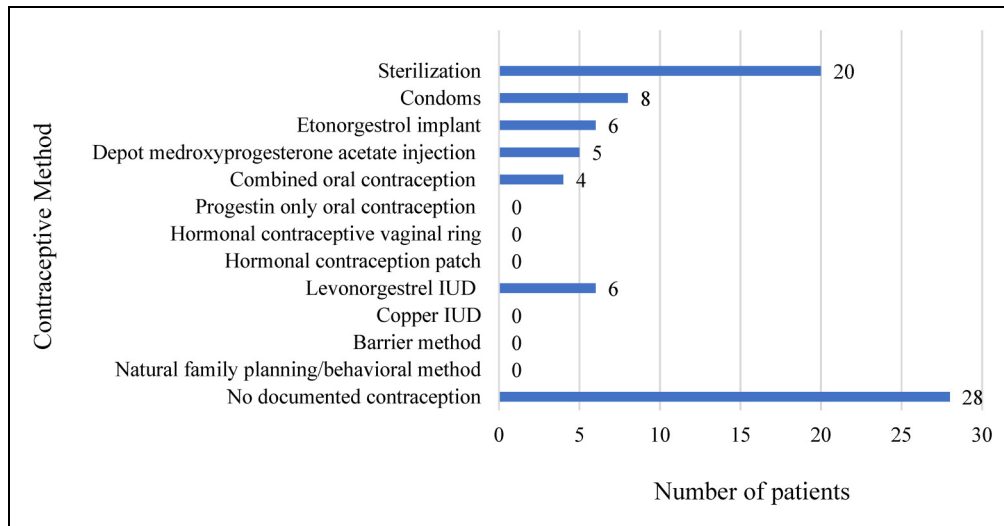
Figure 1. Current contraceptive methods used by patients (n = 74)*.
*Three patients reported use of both condoms and another form of contraception. IUD = intrauterine device.
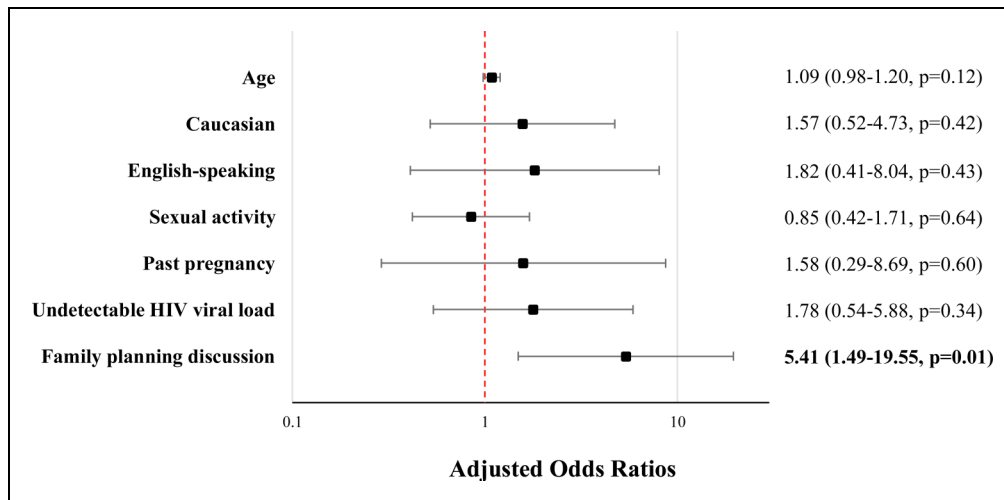

Figure 2. Multivariate analysis of contraceptive use in women with HIV.

the use of contraception in general for female PLWH. It has been demonstrated previously that minority and marginalized populations may have concerns about contraceptive coercion.[18] This is an important consideration for providing contraceptive care within the framework of reproductive justice, which includes the right to bodily autonomy and individual decision-making about contraception choice and childbearing.

Our state has a large Hispanic population (49.3%), making our study unique.[19] Although rates of hormonal contraception use were lower in Hispanic and non-English speaking patients, differences were not statistically significant, likely due to the size of the study cohort. Access to reproductive health care is variable in the US, and vulnerable minority groups are affected by barriers to care even with publicly funded contraceptive services.[20] It is also important that FPD extend beyond options of barrier methods in female PLWH.[21]

Hormonal contraceptive methods have been shown to be highly effective in reducing pregnancy risk even in female PLWH receiving ART,[22] despite concerns about drug-drug interactions. Although interactions can occur with some antiretrovirals,[23–25] most of the commonly used antiretrovirals today do not have major interactions with hormonal contraceptives. Very few patients in our study were receiving efavirenz- or booster-containing regimens, which can result in drug-drug interactions with hormonal contraception.

In the US, as demonstrated in our study, females account for a low percentage of the HIV population and oftentimes women's health issues are not prioritized. This is supported by our finding that less than 50% of female PLWH of childbearing age had a family planning discussion with their clinic provider, despite multiple opportunities (mean clinic visits 4.8). These are potential missed opportunities to provide these services.

Our study did have limitations. Retrospective chart reviews rely on documentation of all patient care discussions. However, some patient care discussions may not have been captured through documentation, In addition retrospective chart reviews may not capture all medications (such as emergency contraception), or sexual activity/number of partners. There are also a number of reasons why a patient may not be using contraception, which may not be captured on a chart review. We did not assess adverse events from prior contraception use. Our study did not collect information on income or education level, which could impact contraception use.

Conclusions

Routine FPD and contraception use in female PLWH were low. Rates of sterilization were high in female PLWH. Like all women of childbearing age, it is critical that female PWLH be offered routine family planning services in order to prevent and/or appropriately plan and space pregnancies, as well as decrease risk for mother to child transmission. Providing quality family planning services may increase contraception use and also ensure selection of the most appropriate form of contraception in female PLWH.

Author Disclosure Statement

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Declaration of Conflicting Interests

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Ethics Approval

The study protocol was approved by the University of New Mexico Human Research Protections Office institutional review board.

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References

1. Guttmacher Institute. Contraceptive Use in the United States. Available from: https://www.guttmacher.org/fact-sheet/contraceptive-use-united-states. Accessed February 27, 2021.

2. Daniels K, Daugherty J, Jones J. Current contraceptive status among women aged 15–44: United States, 2011–2013. *NCHS Data Brief*. 2014;173:1–8.

3. Gele AA, Musse FK, Shrestha M, et al. Barriers and facilitators to contraceptive use among Somali immigrant women in Oslo: a qualitative study. *PLOS ONE*. 2020;15(3):e0229916. doi: 0.1371/journal.pone.0229916

4. Centers for Disease Control and Prevention. Diagnoses of HIV infection among adults and adolescents in metropolitan statistical areas—United States and Puerto Rico, 2018. HIV Surveillance Data Tables 2020;1(No. 3). http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html</authors>. Published August 2020. Accessed September 20, 2021.

5. Mitchell HS, Stephens E. Contraception choice for HIV positive women. *Sex Transm Infect*. 2004 Jun 1;80(3):167–173. doi: 10.1136/sti.2003.008441

6. Patel RC, Bukusi EA, Baeten JM. Current and future contraceptive options for women living with HIV. *Expert Opin Pharmacother*. 2018 Jan;19(1):1–12. doi: 10.1080/14656566.2017.1378345

7. Budhwani H, Hearld KR, Dionne-Odom J, et al. HIV Status and contraceptive utilization among women in Cameroon. *J Int Assoc Provid AIDS Care*. 2019;18:2325958219826596. doi: 10.1177/2325958219826596

8. World health organization. Selected Practice recommendations for contraceptive use, 3rd edition 2016. Available at: http://apps.who.int/iris/bitstream/handle/10665/252267/9789241565400-eng.pdf;jsessionid = 125C9B0E57448FB169339C971657D641?sequence = 1.

9. Curtis KM, Tepper NK, Jatlaoui TC, et al. US Medical eligibility criteria for contraceptive use, 2016. *MMWR Recomm Rep*. 2016;65(RR-3):1–104.

10. Stanwood NL, Cohn SE, Heiser JR, et al. Contraception and fertility plans in a cohort of HIV-positive women in care. *Contraception*. 2007;75(4):294–298. doi: 10.1016/j.contraception.2006.12.012

11. Heikinheimo O, Lähteenmäki P. Contraception and HIV infection in women. *Hum Reprod Update*. 2008;15(2):165–176. doi: 10.1093/humupd/dmn049

12. Polis CB, Bradley SEK, Bankole A, et al. Typical-use contraceptive failure rates in 43 countries with demographic and health survey data: summary of a detailed report. *Contraception*. 2016;94(1):11–17. doi: 10.1016/j.contraception.2016.03.011

13. Aebi-Popp K, Mercanti V, Voide C, et al. Neglect of attention to reproductive health in women with HIV infection: contraceptive use and unintended pregnancies in the Swiss HIV cohort study. *HIV Med*. 2018;19(5):339–346. doi: 10.1111/hiv.12582

14. Committee on Health Care for Underserved Women. The American College of Obstetricians and Gynecologists. Access to Contraception. Available from: https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Health-Care-for-Underserved-Women/Access-to-Contraception?IsMobileSet = false#42. Accessed March 20, 2021.

15. Cuca YP, Dawson Rose C. Social stigma and childbearing for women living with HIV/AIDS. *Qual Health Res*. 2016;26(11):1508–1518. doi: 1177/1049732315596150

16. Samuel MI, Welch J, Tenant-Flowers M, et al. Contraception and medical gynaecology for HIV-positive women in a one-stop clinic. *Int J STD AIDS*. 2008;19(8):559–560.

17. Amutah NN, Gifuni J, Wesley Y. Shaping the conversation: a secondary analysis of reproductive decision-making among black

mothers with HIV. *Clin Med Insights Womens Health*. 2016;9(Suppl 1):1–8. doi: 10.4137/CMWH.S34671

18. Shankar M, William M, Hearst McClintock A. True choice in reproductive care: using cultural humility and explanatory models to support reproductive justice in primary care. *J Gen Intern Med*. 2021;36(5):1395–1399.

19. United States Census Bureau. QuickFacts. Available at: https://www.census.gov/quickfacts/NM. Accessed August 13, 2021.

20. Guttmacher Institute. Do Racial and Ethnic Differences in Contraceptive Attitudes and Knowledge Explain Disparities In Method Use? Available from: https://www.guttmacher.org/journals/psrh/2012/09/do-racial-and-ethnic-differences-contraceptive-attitudes-and-knowledge-explain. Accessed September 7, 2020.

21. Kancheva Landolt NT, Lakhonphon S, Ananworanich J. Contraception in HIV-positive female adolescents. *AIDS Res Ther*. 2011;8(1):19. doi: 10.1186/1742-6405-8-19

22. Pyra M, Heffron R, Mugo NR, et al. Effectiveness of hormonal contraception in HIV-infected women using antiretroviral therapy. *AIDS*. 2015;29(17):2353–2359. doi: 10.1097/QAD.0000000000000827

23. Patel RC, Morroni C, Scarsi KK, et al. Concomitant contraceptive implant and efavirenz use in women living with HIV: perspectives on current evidence and policy implications for family planning and HIV treatment guidelines. *J Int AIDS Soc*. 2017;20(1):21396. doi: 10.7448/IAS.20.1.21396

24. Nanda K, Stuart GS, Robinson J, et al. Drug interactions between hormonal contraceptives and antiretrovirals. *AIDS*. 2017;31(7):917–952. doi: 10.1097/QAD.0000000000001392

25. Scarsi KK, Darin KM, Chappell CA, et al. Drug-drug interactions, effectiveness, and safety of hormonal contraceptives in women living with HIV. *Drug Saf*. 2016;39(11):1053–1072. doi: 10.1007/s40264-016-0452-7