



Factors Associated with the Uptake of Long-acting Reversible Contraception and Contraceptive Use in Postpartum People with HIV at a Single Tertiary Care Center

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Abstract

Objective This study aimed to elucidate factors contributing to uptake of highly effective contraception, including permanent contraception, and no contraceptive plan among postpartum people with HIV (PWHIV).

Study Design A retrospective cohort analysis was conducted to correlate postpartum birth control (PPBC) with sociodemographic and biomedical variables among postpartum PWHIV who received care at The Ruth M. Rothstein CORE Center and delivered at John H. Stroger, Jr. Hospital of Cook County in Chicago, from 2012 to 2020.

Results Earlier gestational age (GA) at initiation of prenatal care, having insurance, and increased parity are associated with uptake of highly effective contraception. Meanwhile, later GA at presentation increased odds of having no PPBC plan.

Conclusion Early prenatal care, adequate insurance coverage, and thorough PPBC counseling are important for pregnant PWHIV.

Keywords

- ▶ HIV
- ▶ postpartum contraception
- ▶ long-acting reversible contraception
- ▶ insurance payor

Key Points

- Contraceptive use among PWHIV is poorly understood.
- Having insurance and increased parity are associated with long-acting reversible contraception use.
- Earlier GA at first prenatal care visit is associated with increased PPBC uptake.

Contraception is integral to preventive care for pregnancy-capable people with HIV (PWHIV). Unplanned pregnancies

reduce the opportunity for early viral control¹ and increase the chance of vertical transmission of HIV.² Further, pregnancies among PWHIV are at increased risk of prenatal, peripartum, and postpartum complications.³ However,

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postpartum contraception use is underevaluated in this population. Limited data demonstrate that pregnancy-capable PWHIV are less likely to use contraception, including long-acting reversible contraception, or LARC (e.g., intrauterine devices, implants) compared with those without HIV.⁴ Yet, postpartum PWHIV are more likely to choose LARC or permanent contraception when compared with people without HIV.^{5,6}

The postpartum period, both during the delivery hospitalization and in the outpatient setting, is a critical opportunity for preventative health measures like contraception.⁷ However, data suggest that PWHIV have a high frequency of loss to postpartum follow-up, indicating that prenatal and postpartum counseling and immediate postpartum contraceptive initiation is crucial.^{8,9} Understanding factors associated with contraceptive use and nonuse in the postpartum period are important for improving reproductive health care for PWHIV.

We sought to evaluate factors associated with uptake of highly effective methods of postpartum birth control (PPBC) and, conversely, lack of reported PPBC plans, among postpartum PWHIV receiving care at a large, tertiary care center with wraparound clinical care services for PWHIV. We hypothesized that markers of social marginalization—such as insurance status—would be independently associated with lack of PPBC plan, while increased parity and engagement in prenatal care services would be associated with uptake of LARC or permanent contraception.

Methods

This is a retrospective cohort analysis of all postpartum PWHIV who delivered at John H. Stroger, Jr. Hospital of Cook County (Stroger) and who received care at The Ruth M. Rothstein CORE Center (CORE), affiliated with Stroger, from 2012 to 2020. Stroger is the flagship tertiary care hospital for Cook County Health, the public safety net health care system for Cook County, which is one of the most densely populated counties in the United States, encompassing the city of Chicago and surrounding areas. As part of Cook County Health services, comprehensive HIV care is provided at CORE. There, pregnancy-capable PWHIV can access reproductive health services, including prenatal care, which was provided by two of the authors of this manuscript (H.C. and J.S.).

The co-primary outcomes of this study were either (1) receipt of LARC or permanent contraception (hereafter referred to as “highly effective contraception”) or (2) no documented PPBC plan at postpartum discharge or first recorded postpartum visit (if attended). These were ascertained through chart abstraction by two authors of this manuscript (L.B. and L.Y.) and verified by the senior author (A.P.). In 2017, Stroger began offering inpatient LARC during the delivery hospitalization rather than exclusively offering LARC in the outpatient setting. Thus, delivery between 2012 and 2017 was included as a demographic factor. We analyzed both the uptake of highly effective contraception and no documented PPBC plan. Bivariable and multivariable logistic

regression were performed to evaluate factors associated with receipt of highly effective contraception or no documented PPBC plan. Covariables were eligible for inclusion in the logistic regression model if $p < 0.15$ on bivariable analysis. Stepwise backward hierarchical selection of covariables was performed, with retention in the model at $p < 0.05$. Statistical significance was set at $p < 0.05$. All analyses were performed in Stata (StataCorp, College Station, TX). IRB approval was obtained from Cook County Health (Institutional review board [IRB] #21-070).

Results

Of 195 individuals who were eligible for analysis, 178 met the inclusion criteria. Of these, 36 (20.2%) had no documented PPBC plan, while 51 (28.6%) received LARC. Between 2012 and 2017, before immediate postpartum LARC was offered, 17 (33.3%) received LARC. One individual chose the vaginal ring, 1 individual chose the patch, 14 chose barrier protection, 6 chose oral contraceptive pills or progestin-only pills, and 69 chose Depo-Provera injections. For LARC, 16 chose Nexplanon, 19 chose an intrauterine device, and 16 chose permanent contraception (sterilization).

Highly Effective Contraception

On bivariable analysis, highly effective contraception had a lower frequency of self-pay/uninsured status (7.8 vs. 26.8%, $p = 0.005$) and a lower frequency of nulliparity when compared with other or no PPBC (25.5 vs. 42.5%, $p = 0.03$). There was no permanent contraception performed in the nulliparous subgroup. People receiving highly effective contraception presented to prenatal care 3 weeks earlier and had a higher frequency of a “high-risk” neonatal protocol (i.e., three-drug antiretroviral regimen vs. low-risk single drug protocol) than those who elected other forms or had no PPBC, though these findings did not reach statistical significance (→Table 1). After stepwise backward hierarchical selection of insurance payor, nulliparity, timing of presentation to prenatal care, and need for high-risk neonatal protocol, only insurance payor and nulliparity were retained in the multivariable logistic regression model. After adjusting for insurance and nulliparity, both were independently associated with LARC or permanent contraception (insurance adjusted odds ratio (aOR) 0.22, 95% confidence interval (CI) 0.07–0.67; nulliparity aOR 0.44, 95% CI 0.21–0.93).

No Postpartum Birth Control Plan

On bivariable analyses, individuals who endorsed no PPBC plan presented to prenatal care approximately 6 weeks later than those who had a PPBC plan (median gestational age [GA] at presentation: 17 vs. 11 weeks, $p = 0.01$) and had a higher frequency of nulliparity, though the latter did not reach statistical significance (→Table 2). After stepwise backward hierarchical selection of timing of presentation to prenatal care and nulliparity, both covariables were included in the model. After adjusting for nulliparity, GA at initial visit conferred a modest increase in odds of no PPBC plan (aOR 1.06, 95% CI 1.02–1.10).

Table 1 Biomedical and sociodemographic data of postpartum people living with HIV, by receipt of long-acting reversible contraception or permanent contraception			
	LARC or permanent contraception (<i>n</i> = 51)	Other methods or undisclosed (<i>n</i> = 127)	<i>p</i> -Value ^a
Age, in years ^b	29 (24–33)	28 (23–33)	0.73
Self-reported race			
White	5 (9.8)	15 (11.8)	0.85
Black	44 (86.3)	109 (85.8)	
Other	2 (3.9)	3 (2.4)	
Latinx ethnicity	4 (7.8)	13 (10.2)	0.78
Insurance payor			
Government payor	47 (92.2)	93 (73.2)	0.005
Self-pay or others	4 (7.8)	34 (26.8)	
Nulliparous	13 (25.5) ^c	54 (42.5)	0.03
Sexual partner aware of HIV diagnosis	30 (58.8)	60 (47.2)	0.16
Perinatally acquired HIV	6 (11.8)	15 (11.8)	1.0
Use of efavirenz during pregnancy ^d	4 (7.8)	15 (11.8)	0.44
Cardiometabolic disease ^e	9 (17.6)	23 (18.1)	0.94
Viremia at time of initial prenatal visit	29 (56.9)	58 (45.7)	0.18
GA at initial prenatal visit	10 (7–18)	13 (8–24)	0.10
Need for high-risk neonatal protocol due to viremia after 32 weeks' GA	16 (31.4)	23 (18.1)	0.05
GA at delivery	39 (38–39)	39 (37–39)	0.74
Delivery between 2012 and 2017 ^f	17 (33.3)	30 (23.6)	0.18

Abbreviations: GA, gestational age; LARC, long-acting reversible contraception.

Data are median (IQR) or *n* (%), unless otherwise specified.

Bold indicates statistical significance (<0.05).

^aChi-square or Fisher's exact test for categorical variables, Wilcoxon rank-sum test for continuous variables.

^bAvailable for 177 participants.

^cNo sterilizations were performed.

^dEfavirenz use was inspected due to studies which have shown reduced etonogestrel (found in Nexplanon implant) exposure in people taking efavirenz, possibly affecting viral control.¹³

^ePresence of pregestational diabetes mellitus and/or chronic hypertension.

^fImmediate postpartum LARC was not offered during this period.

Discussion

Almost one-third of postpartum PWHIV chose highly effective contraception, while one-fifth had no PPBC plan, and timing of presentation to prenatal care, insurance status, and parity were associated with PPBC choices. These data demonstrate a need for comprehensive contraception counseling for pregnant and postpartum PWHIV, especially those who present later to prenatal care or do not have government payor insurance.

Those who present earlier to prenatal care may be more likely to have a PPBC plan for several reasons. More prenatal visits and time with a provider may increase the likelihood of comprehensive contraception counseling. Patients may have more time to contemplate a decision. Patients who present earlier to care may be more likely to plan in general, including their PPBC choices.

In our study at a public safety net hospital in a large metropolitan area, people who did not have government-sponsored insurance had lower odds of receiving LARC or

permanent contraception. All patients at CORE had full coverage for contraception through the AIDS drug assistance program or grants, but if the hospital did not have a sufficient supply of LARC, patients would have to seek contraception elsewhere and potentially pay out of pocket. While Medicaid and most private insurance cover female-controlled contraception under the Affordable Care Act of 2010,¹⁰ those who are not insured by the government or by a private insurer that must comply with the Affordable Care Act (ACA) are not guaranteed a contraceptive method of their choice. Given that insurance payors largely influence the options an individual may have, providers should screen patients for this barrier and provide the appropriate referrals. Notably, in Illinois, postpartum Medicaid coverage was extended from 60 days to 12 months in 2021.¹¹ At our center, all patients had full coverage for contraception either through insurance or other funding sources; barriers to access were more likely related to contraception and appointment availability.

Integrated and individualized family planning and HIV care promotes the uptake of contraceptive methods.¹² It is

Table 2 Biomedical and sociodemographic data of postpartum people living with HIV, by lack of postpartum birth control uptake or plan

	No postpartum birth control (n = 36)	Postpartum birth control (n = 142)	p-Value ^a
Age, in years ^b	30 (25–34)	28 (23–33)	0.26
Self-reported race			
White	6 (16.7)	14 (9.9)	0.21
Black	28 (77.8)	125 (88.0)	
Other	2 (5.5)	3 (2.1)	
Latinx ethnicity	3 (8.1)	14 (9.9)	1.0
Insurance status			
Government payor	26 (72.2)	114 (80.3)	0.29
Self-pay or others	10 (27.8)	28 (19.7)	
Nulliparous	17 (47.2)	50 (35.2)	0.18
Sexual partner aware of HIV diagnosis	14 (38.9)	76 (53.5)	0.11
Perinatally acquired HIV	4 (11.1)	17 (12.0)	1.0
Use of efavirenz during pregnancy	5 (8.3)	13 (10.7)	0.61
Cardiometabolic disease ^c	9 (25.0)	23 (16.2)	0.22
Viremia at time of initial prenatal visit	19 (52.8)	68 (47.9)	0.60
GA at initial prenatal visit	18 (11–32)	11 (7–19)	0.001
Need for high-risk neonatal protocol due to viremia after 32 weeks' GA	6 (16.7)	33 (23.2)	0.39
GA at delivery	39 (38–39)	39 (37–39)	0.46

Abbreviation: GA, gestational age.

Data are median (IQR) or n (%), unless otherwise specified.

Bold indicates statistical significance (<0.05).

^aChi-square or Fisher's exact test for categorical variables, Wilcoxon rank-sum test for continuous variables.

^bAvailable for 177 participants.

^cPresence of pregestational diabetes mellitus and/or chronic hypertension.

important to balance discussions regarding HIV management with contraception options in routine care, especially in specialized clinics. Regardless of setting, providers who care for PWHIV should address family planning, fertility, and reproductive health to optimize shared decision-making regarding patients' health.

Limitations of this study include the difficulty in assessing how PPBC options were presented to the included individuals. Prenatal and postpartum care was provided by two main physicians, though we did not assess counseling practices or provider attitudes toward PPBC. Additionally, we have not gathered information on patients' perspective regarding PPBC, counseling, or rationale for choices; this limits our understanding of some findings, such as why high-risk neonatal protocol was associated with increased highly effective contraception uptake. We do not know if people with a high-risk neonatal protocol were aware of their risk compared with virally suppressed people and how that would influence their PPBC choice. We also do not know if patients were satisfied with their PPBC choices. Further qualitative research may reveal important factors influencing patient decisions and satisfaction, which are essential to improving health care, and may shed light on the utility of

possible future interventions, such as standardized counseling and script usage by providers.

Conclusion

We believe that early prenatal care, insurance coverage, and thorough PPBC counseling are important for pregnant PWHIV to improve uptake of highly effective forms of contraception, thus improving patient health and future outcomes.

Note

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Conflict of Interest

None declared.

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