Postpartum Depressive Symptoms in Women Living With HIV in Botswana

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POSTER 0767

BACKGROUND

Postpartum depression (PPD) is associated with poor maternal and child health outcomes. Few studies have evaluated PPD in women living with HIV (WLHIV) in Botswana, a high prevalence HIV setting.

OBJECTIVES

- **To assess the association of maternal HIV infection with PPD symptoms**
- **To assess factors associated with PPD symptoms in WLHIV**

METHODS

Study Design: Prospective cohort

Study Population: WLHIV and HIV-uninfected (HIV-U) women were enrolled during pregnancy at antenatal clinics in Gaborone, Botswana and followed through 12 months postpartum.

Primary Outcome: Using the Edinburgh Postnatal Depression Scale (EPDS), we evaluated PPD symptoms at 2, 6, and 12 mo postpartum in WLHIV and HIV-U women. EPDS is a screening tool used to identify PPD symptoms with possible scores from 0 to 30. Women scoring ≥10 on the EPDS or reporting thoughts of self-harm were defined as at risk for ongoing PPD symptoms at any single study visit where an EPDS was completed.

Secondary outcomes: EPDS score ≥10, EPDS score ≥13, and EPDS score ≥13 or reporting thoughts of self-harm

Primary Exposure of Interest: Maternal HIV infection

Covariates: Age, gravidity, education level, marital status, and employment status

Statistical Analysis: Generalized estimating equation models were fit to assess the association of maternal HIV infection with risk of PPD symptoms in the first year postpartum. Subgroup analyses in WLHIV were performed to assess factors associated with risk of PPD symptoms.

Table 1. Baseline Characteristics of Women

Characteristic	WLHIV (n=195)	HIV-U (n=126)	*p* value
Maternal age, years	28.9 (25.3, 34.5)	24.4 (20.8, 29.0)	<0.001
Gravidity	3 (2, 4)	1 (1, 3)	<0.001
Married	14 (7.2)	14 (11.1)	0.223
Annual Income, $USD			
<$240	74 (37.9)	44 (34.9)	0.889
$240-$1200	25 (12.8)	16 (12.7)	
>$1200	90 (46.2)	63 (50.0)	
Does not know	6 (3.1)	3 (2.4)	
Highest education level			
Secondary school or less	181 (92.8)	87 (69.1)	<0.001
Tertiary school or higher	14 (7.2)	39 (30.9)	
Employed	32 (16.4)	23 (18.3)	0.669
CD4 cell count, cells/mm³ at enrollment			
<200	16 (8.2)	---	---
201-500	92 (47.2)	---	---
>500	87 (44.6)	---	---
HIV RNA level at enrollment, copies/mL			
<40	181 (92.8)	---	---
41-1000	11 (5.6)	---	---
>1000	3 (1.4)	---	---
ART regimen			
TDF/FTC/DTG	125 (64.1)	---	---
TDF/FTC/EFV	70 (35.9)	---	---
Years since HIV diagnosis	1.6 (0.9, 4.9)	---	---
On ART at conception	99 (53.5)	---	---

Continuous variables expressed as median (Interquartile range) and categorical variables as n (%). p values calculated from Wilcoxon, Chi-square or Fisher's exact tests as appropriate.

ART=Antiretroviral Therapy, DTG=Dolutegravir, EFV= Efavirenz, FTC=Emtricitabine, HIV= Human Immunodeficiency Virus, RNA=Ribonucleic Acid , TDF= Tenofovir, WLHIV= Pregnant Women Living with HIV.

Figure1. Percentage of Women at Risk for Postpartum Depressive Symptoms

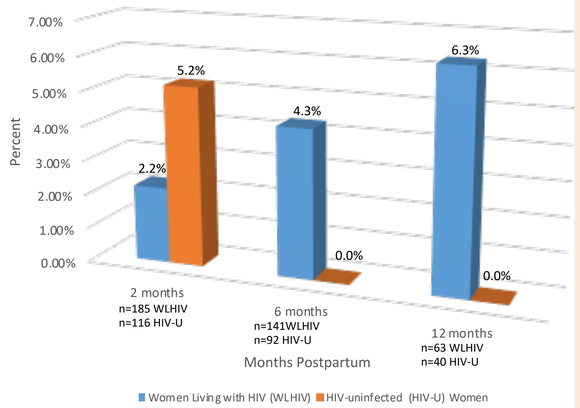


Table 2. Adjusted Generalized Estimating Equation Models of the Association between Maternal HIV Infection and Depressive Symptoms in the First Year Postpartum

Outcome	Adjusted Odds Ratio	95% Confidence Interval
Edinburgh score ≥ 10 or report of thoughts of self-harm	3.37	1.14 – 10.02
Edinburgh score ≥ 10	3.57	1.26 – 10.08
Edinburgh score ≥ 13 or report of thoughts of self-harm	5.16	1.24 – 21.40
Edinburgh score ≥ 13	4.57	1.13 – 18.54

All models adjusted for age, gravidity, highest education level, marital status, and employment.

RESULTS

- **WLHIV were older than HIV-U women (median age 28.9 vs 24.4 years, *p* <0.001) and tend to have higher gravidity (median 3 vs 1, *p* <0.001).**
- **WLHIV were less likely to complete tertiary education (7% vs 31%, *p* <0.001) compared to HIV-U women.**
- **Among WLHIV, 45% had a CD4 count >500 cells/mm³ and 93% had an HIV RNA level <40 copies/mL at enrolment.**
- **All WLHIV received an ART backbone of tenofovir/emtricitabine and either dolutegravir (DTG) or efavirenz (EFV).**
- **After adjusting for cofounders, WLHIV were at increased risk for PPD symptoms compared to HIV-U women [adjusted Odds Ratio (aOR): 3.37, 95% Confidence Interval (CI) 1.14-10.02] (Table 2).**
- **Findings were similar in models evaluating secondary outcomes (Table 2).**
- **In a subgroup analysis of WLHIV, no associations were seen between age, gravidity, employment, CD4, years with HIV, timing of ART initiation, or ART regimen and PPD symptoms.**

CONCLUSION

- **Despite overall low rates of PPD symptoms in this small Botswana cohort, WLHIV may be at higher risk for experiencing PPD symptoms in their first year postpartum compared to HIV-U women.**
- **Screening WLHIV for PPD symptoms and providing support during the postpartum period are important aspects of postpartum care for this vulnerable population and may be protective of both maternal and child well-being.**

We would like to thank all staff and study participants of Gaborone antenatal clinics. This study was supported by the National Institute of Diabetes & Digestive & Kidney Diseases (NIDDK) R01DK109881.