PREP CONTINUATION AND OBJECTIVE ADHERENCE IN PREGNANT/ POSTPARTUM SOUTH AFRICAN WOMEN

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PrEP-PP
Pre-exposure Prophylaxis in Pregnancy & Postpartum

BACKGROUND

- Effective oral PrEP requires daily adherence, but **little is known about: (1) objective levels of adherence during pregnancy and postpartum, and (2) the tenofovir diphosphate (TFV-DP) assay** in dried blood spots (DBS) in this population.
- Adherence to daily oral PrEP may be more complicated in pregnancy when **pregnancy-related side effects may occur**
- A recent PK study in pregnant & postpartum women (IMPAACT 2009) demonstrated that TFV-DP concentrations were 1/3 lower in pregnant vs. postpartum women, highlighting the **importance of understanding protective thresholds for PrEP exposure and metabolism of PrEP drugs among pregnant women**

METHODS

PrEP in pregnancy and postpartum study (PrEP-PP)

- Between Aug 2019 to Oct 2021, we enrolled consenting pregnant, HIV-uninfected women at first antenatal care (ANC) visit with follow-up through 12-months postpartum.
- Women and girls >16-yrs who were eligible for the study received HIV prevention counseling and offered PrEP.
- Analyzed the % who continued on PrEP (repeat prescription) after 1 and 3-months
- Evaluated objective levels of adherence using an indirect liquid chromatography with tandem mass spectrometry DBS TFV-DP **(Table 1)**
- Evaluated TFV-DP levels stratified by pregnancy vs. postpartum with associated correlates using prevalence ratios adjusting for age & relationship

Table 1. Defined thresholds for TFV-DP and adherence interpretations in pregnant and postpartum women [1]

Adherence interpretation	Pregnant women (fmol/punch)	Postpartum women (fmol/punch)
~ 7 doses per week	=>650	=>1050
2-6 doses per week	200-649	250-1049
<2 doses per week	<200	<300

- PrEP **continuation at 1m and 3m was high** (66% and 58% respectively)
- **65% of women had tenofovir present in DBS** (73% postpartum; 62% during pregnancy)
- **Most were intermittent PrEP users** (<2 doses per week)
- *Interventions needed to improve peripartum PrEP continuation & adherence*

RESULTS (Table 2)

- **In 1201 pregnant women (median age=26 years; median gestation=21 weeks), 84% started PrEP during their first ANC visit**
  - **At 1m, 66% received repeat prescription**
  - **At 3m, 58% received repeat prescription**
- Analyzed DBS in women who returned at 3-months and reported any PrEP use in past month (n=179 of 229 returning for 3m visit; 78%)
- Two-thirds (65%) had TFV-DP present in their sample
  - **62% in pregnancy,**
  - **73% postpartum** (p=0.20)
- **52% of women took PrEP <7 days per week**, indicating intermittent, not daily, PrEP use
- **35% taking PrEP <2-times in the past week**

- **Correlates of having TFV-DP present in DBS include:**
  - Older maternal age (24+ yrs old vs <24 yrs: aPR=1.10; 95% CI=0.97, 1.25)
  - Early gestational age at first ANC visit (<20 weeks at 1st ANC: aPR=1.10; 95% CI=1.00, 1.01)
  - Single relationship status vs. married/cohabiting (aPR=1.14; 95% CI=0.98, 1.32)
  - High baseline HIV risk perception (aPR=1.39; 95% CI=1.10, 1.52)

1. Stranix-Chbanda, et al. Tenofovir Diphosphate Concentrations in Dried Blood Spots From Pregnant and Postpartum Adolescent and Young Women Receiving Daily Observed Pre-exposure Prophylaxis in Sub-Saharan Africa 2020. CID, 2020.

Table 2: Objective PrEP adherence from TFV-DP from DBS in women reporting recent use at 3-month visit in pregnancy and postpartum in Cape Town, South Africa [1]

	3-month follow up (# samples = 179)		
Adherence n (%)	Total	Pregnancy	Postpartum
Any TFV-DP present	**117 (65%)**	**84 (62%)**	**33 (73%)**
~7 doses/wk	23 (13%)	19 (14%)	4 (9%)
~2-6 doses/wk	31 (17%)	26 (19%)	5 (11%)
~<2 doses/wk	63 (35%)	39 (28%)	24 (53%)
No TFV-DP present	65 (36%)	50 (39%)	12 (27%)
Total	**179 (100%)**	**134 (75%)**	**45 (25%)**

CONCLUSIONS

- **PrEP continuation and objective adherence were higher in pregnancy and postpartum than in other studies of AGYW**
- Many women showed intermittent PrEP use in peripartum
- Characteristics which are associated with less optimal use may help us tailor interventions to specific age groups or specific women

ADDITIONAL KEY INFORMATION

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