

## 20 Self-reported HIV risk in Kenyan pregnant and breastfeeding women compared to non-pregnant, non-breastfeeding women seeking HIV pre-exposure prophylaxis



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**OBJECTIVES:** In 2016, WHO recommended HIV pre-exposure prophylaxis (PrEP) for women who are pregnant or breastfeeding (PBF) and at substantial risk of HIV infection (defined as HIV incidence  $>3/100$  person-years in absence of PrEP). This analysis compared self-reported HIV risk factors at baseline between PBF versus non-PBF women seeking PrEP in Kenya, and explored differences in continuation in PrEP services at 1, 3, and 6 months between these groups.

**METHODS:** Data were collected on women served by a PrEP rollout project implemented in 10 counties in Kenya, including both public and private sector service delivery sites. All sites received provider training and support for client records and commodities management. Baseline self-reported HIV risk factors and continuation at 1, 3, and 6 months were compared for PBF vs. non-PBF women (control). Continuation in PrEP services was defined as receipt of PrEP refill at that months visit.

**RESULTS:** Between March 2017 and February 2019, 16,472 women sought PrEP at project-supported sites, including 474 PBF women. PBF and non-PBF women reported similar proportions of inconsistent condom use at baseline. PBF women were less likely to report engagement in transactional sex (33.3% vs. 58.3%, OR 0.36, 95% CI [0.29-0.43]), sex under influence of alcohol/drugs (17.5% vs. 31.9%, OR 0.45, 95% CI [0.36-0.58]), or recurrent use of HIV post-exposure prophylaxis (1.5% vs. 3.3%, OR 0.44, 95% CI [0.21-0.94]), but more likely to report having a known HIV positive partner (27.6% vs. 8.2%, OR 4.26, 95% CI [3.46-5.25]), compared to control. Continuation in PrEP services at 1, 3, and 6 months post-initiation of PrEP was similarly low for PBF and non-PBF women (40.7% vs. 42.6%, 14.3% vs. 13.6%, and 6.1% vs. 4.6%, respectively).

**CONCLUSION:** This analysis found differences in baseline self-reported HIV risk between PBF and non-PBF women seeking PrEP in Kenya, but similar patterns of PrEP continuation at 1, 3, and 6 months post-initiation of PrEP. Results, while limited by small numbers of pooled pregnant and breastfeeding women (who may differ in HIV risk), contribute data to the limited evidence base on PrEP delivery for PBF women in low resource settings. Findings suggest PBF women, who are known to be at higher risk for HIV acquisition vs. non-PBF women, may be similarly challenging to retain in large-scale PrEP programs. Additional data are needed to understand motivations for discontinuation and strategies for improving continuation and adherence among PBF PrEP users.

**LEARNING OBJECTIVES:** Describe differences in at least one self-reported measure of HIV risk between women who are pregnant or breastfeeding compared to non-pregnant, non-breastfeeding women seeking HIV pre-exposure prophylaxis in Kenya.

## 21 The association between cervical cytokines and HIV acquisition in pregnant and postpartum women



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**OBJECTIVES:** We evaluated relationships between concentrations of cervical cytokines and HIV acquisition in pregnant and postpartum Kenyan women.

**METHODS:** A nested case-control study was performed utilizing data collected from the Mama Salama Study, a prospective cohort study that enrolled pregnant, HIV-uninfected women in Kenya. Cervical swab collection and HIV testing using nucleic acid amplification testing (NAAT) were performed at 1-3-month intervals through nine months postpartum. Concentrations of 9 cytokines (IFN $\gamma$ , IL-1 $\beta$ , IL-6, IL-8, IL-10, TNF $\alpha$ , IP-10, MIP-1 $\alpha$ , and MIP-1 $\beta$ ) were measured from cervical swabs collected at the visit prior to detection of HIV. Cases were defined as women who acquired HIV during follow-up, and had a cervical swab collected within 12 weeks of diagnosis. Controls were matched 3:1 based on age, marital status, partner HIV status, transactional sex, and gestational age or weeks postpartum at cervical swab collection. Cytokine concentrations were measured using electrochemiluminescence immunoassays, and compared between cases and controls using Wilcoxon rank sum tests. Principal component analysis was used to create a summary score for closely correlated cervical cytokines. Associations between this principal component score, the remaining uncorrelated cytokine (IP-10), and HIV acquisition were evaluated using conditional logistic regression analysis.

**RESULTS:** This analysis included 14 cases and 42 matched controls. Acquisition of HIV was associated only with increased concentrations of IP-10 ( $p=0.03$ ). Eight cytokines (IFN $\gamma$ , IL-1 $\beta$ , IL-6, IL-8, IL-10, TNF $\alpha$ , MIP-1 $\alpha$  and MIP-1 $\beta$ ) were found to be highly correlated by principal component analysis (eigenvalue 6.29, explaining 70% of variability). Conditional logistic regression analysis demonstrated no association between the principal component and HIV acquisition (OR=1.75, 95% CI 0.47, 1.93;  $p=0.893$ ), but did show an association between increased concentrations of the uncorrelated cytokine, IP-10, and HIV acquisition (OR=1.74, 95% CI 1.04, 2.93;  $p=0.034$ ). This association persisted in multivariable regression adjusting for bacterial vaginosis, vaginal washing, vulvovaginal candidiasis, trichomoniasis, and condomless sex.

**CONCLUSION:** HIV acquisition was associated with increased concentrations of the pro-inflammatory cytokine IP-10 in pregnant and postpartum women. Further studies are needed to determine how IP-10 may influence HIV pathogenesis.

**LEARNING OBJECTIVES:** Learners will be able to identify cervical cytokines associated with HIV acquisition in pregnant and postpartum women.

## 22 Combination antiretroviral therapy and hypertensive disorders of pregnancy at grady memorial hospital



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**OBJECTIVES:** Our objectives were 1) to compare the incidence of hypertensive disorders of pregnancy (HDP) among pregnant women living with HIV (WLHIV) on combination antiretroviral therapy (cART) to HIV-negative patients, and 2) to discern whether type of cART regimen or timing of cART initiation alters the risk for the development of HDP.