(AGYW) from Kenya and South Africa: The POWER demonstration project

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Background

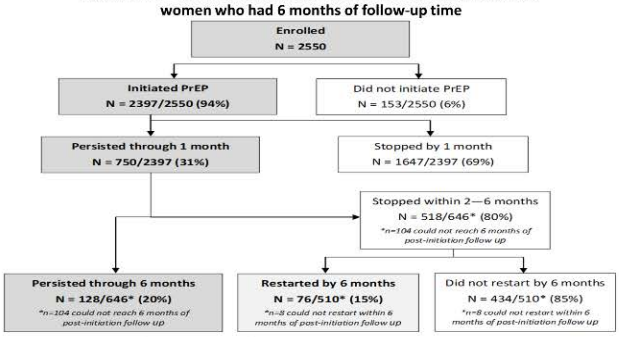
- HIV incidence remains high among African adolescent girls and young women (AGYW) despite increased HIV testing, treatment and improved viral suppression.
- Pre-exposure prophylaxis (PrEP) has over 90% effectiveness when taken with good but not perfect adherence. Data from MSM in iPrEX OLE indicated 100% effectiveness with an average of 4 doses per week.
- PrEP is part of national guidelines in many African countries and delivery is expanding among African AGYW.
- Data are needed about PrEP initiation, continuation and HIV acquisition to inform broader scale-up of PrEP delivery.

Aims

- Characterize young women who initiate PrEP in western Kenya and South Africa
- Determine PrEP persistence and patterns of use
- Assess HIV incidence and drug resistance among PrEP seroconverters
- Evaluate different PrEP delivery models

Results

Figure 1: PrEP persistence and restarts over initial 6 months, among women who had 6 months of follow-up time



- **31% of women returned for a 1 month refill; 20% of whom persisted with PrEP through 6 months**
- **Among women who stopped PrEP within 2-6 months, 15% restarted by 6 months**

•Among 2550 young women in Kenya and South Africa, PrEP uptake was high (93%), drop off was high in the first month (31% returned at 1 month for a refill), and PrEP persistence was moderate (20% persisted through 6 months, and an additional 15% stopped & restarted by 6 months)

Methods

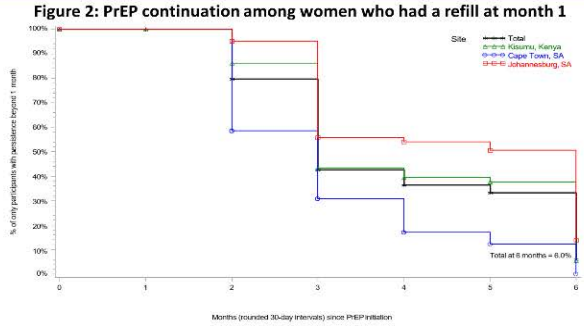
- The Prevention Options for Women Evaluation Research (POWER) study was an evaluation of PrEP delivery models for young women in Kenya and South Africa in the context of family planning, adolescent and primary health clinics, and through a mobile van providing adolescent health services.
- POWER recruited sexually-active HIV negative AGYW ages 16-25 in Kisumu, Kenya and Cape Town and Johannesburg, South Africa from 2017-2020.
- At enrollment, all women were counseled on risk reduction and HIV prevention and were given the option to initiate or decline PrEP. AGYW who declined were permitted to initiate at any time during follow up; all women could stop PrEP when they decided they were no longer at risk or when they no longer wanted it.
- Follow-up visits occurred at 1 month and then quarterly for up to 36 months.
- At enrollment, rapid HIV testing, urine pregnancy, serum creatinine, hepatitis B surface antigen and nucleic acid testing for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* (Cepheid GeneXpert™) were conducted. Rapid HIV and urine pregnancy testing were conducted at PrEP refill visits.
- PrEP initiation and persistence were assessed using Kaplan-Meier survival analysis; persistence was defined as uninterrupted PrEP refills through 6 months among women who had a PrEP refill at their 1-month visit.

Cape Town - Tutu Teen tester and Welteveden primary care clinic

Johannesburg - Ward 21 adolescent friendly clinic & Jeppestown primary care clinic

Kisumu - JOOTRH and KMET family planning clinics

Figure 2: PrEP continuation among women who had a refill at month 1



- **Of women who had a PrEP refill at 1 month, the probability of their persisting on PrEP through 6 months is 6% overall (0% to 13% by site)**

Results

Table 1: Demographic and behavioral characteristics

	Total N=2550	Kisumu N=1000	Cape Town N=787	Johannesburg N=763
Age. Median (IQR)	21 (19 - 23)	21 (19 - 23)	20 (18 - 22)	21 (20 - 23)
Marital status				
Single, with partner	2154 (85%)	667 (67%)	762 (97%)	725 (95%)
Married	345 (14%)	311 (31%)	8 (1%)	26 (3%)
Sexual behavior past 3 mos				
Current # SP	1 (1,1)	1 (1,1)	1 (1,1)	1 (1,1)
Has HIV+ SP	106 (4%)	49 (5%)	29 (4%)	28 (4%)
Has SP of unknown HIV status	1672 (66%)	607 (61%)	645 (83%)	420 (55%)
Never uses condoms	689 (27%)	385 (39%)	165 (21%)	139 (18%)
Contraceptive use				
Oral	92 (8%)	12 (3%)	13 (3%)	67 (17%)
Injectable	604 (51%)	100 (23%)	293 (77%)	211 (54%)
Implant	317 (27%)	226 (53%)	52 (14%)	39 (10%)
Other*	38 (3%)	20 (5%)	9 (2%)	9 (2%)
Ever pregnant	1213 (48%)	529 (53%)	250 (32%)	434 (57%)
STIs				
Symptoms	179 (7%)	119 (12%)	33 (4%)	27 (4%)
Chlamydia trachomatis	667 (29%)	172 (17%)	314 (42%)	181 (31%)
Neisseria gonorrhea	221 (10%)	61 (6%)	121 (16%)	39 (7%)
Accepted PrEP at enrollment**	2359 (93%)	871 (88%)	754 (96%)	734 (96%)

*Other contraception includes ring, IUD, diaphragm and tubal ligation, and excludes condoms and emergency contraception
**38 participants initiated PrEP after enrollment for total of 2397 (94% of enrolled women)

Table 2: HIV seroconversions, incidence & resistance

	HIV seroconversions	HIV incidence (per 100 p-yrs)	Antiretroviral resistance (n=13 with results)
Within 3 months after enrollment	8	3.6 (1.6 - 7.1)	2 M184V (assoc with FTC)
>3 months after enrollment	9	1.6 (0.7 - 3.0)	No FTC or TFV mutations
Total	17	2.1 (1.3 - 3.4)	2 M184V (assoc with FTC)

17 seroconversions occurred in 791 p-years of follow-up; HIV incidence of 2.1/100 p-years

Conclusions

- **PrEP initiation was high (93%) among Kenyan and South African young women.**
  - The POWER cohort had substantial HIV risk based on 2/3 having a partner of unknown HIV status, 1/4 reporting they never use condoms, and 1/3 with chlamydia or gonorrhea.
- **PrEP persistence was moderate; 31% returned for a refill at 1 month and 15% restarted PrEP.**
  - Of women who stopped PrEP between 2-6 months, 15% restarted PrEP, suggesting that women can recognize when they need PrEP.
- **HIV incidence was 2.1/100 p-years. Most women who seroconverted had poor adherence or had stopped PrEP.**
  - Two women who seroconverted in the first 3 months had M184V resistance, associated with FTC. All other resistance mutations observed are not associated with TFV or FTC.
- **Additional strategies to simplify PrEP delivery, support adherence and provide different PrEP options for young African women are needed to improve persistence and protection.**

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