PrEP is Efficacious for HIV prevention among Women using DMPA for Contraception

Renee Heffron,[1] Nelly Mugo,[1,2] Edwin Were,[3] James Kiarie,[1,4] Elizabeth Bukusi,[1,2] Andrew Mujugira,[1] Deborah Donnell,[1,5] Allan Ronald,[6] Connie Celum,[1] Jared M. Baeten,[1] for the Partners PrEP Study Team

[1]University of Washington, Seattle, USA; [2]Kenya Medical Research Institute, Nairobi, Kenya; [3]Moi University, Eldoret, Kenya; [4]University of Nairobi and Kenyatta National Hospital; [5]Fred Hutchinson Cancer Research Center; [6]University of Manitoba, Winnepeg, Canada

BACKGROUND

- Effective contraception is imperative for women's health.
- In multiple observational studies, injectable contraceptives, in particular depot medroxyprogesterone acetate (DMPA), have been linked to increasing rates of HIV-1 acquisition and transmission to male partners (when used by HIV-1 infected women).
- Women choosing to use DMPA could combine DMPA usage with pre-exposure prophylaxis (PrEP), in order to have protection from HIV-1 that may override any deleterious effects of DMPA.
- PrEP efficacy among women using DMPA or men exposed to DMPA use by their female partners has not been studied.

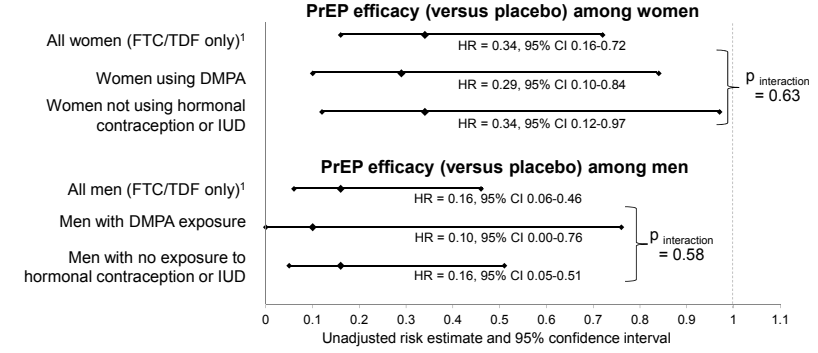
METHODS

- Participants were from the Partners PrEP Study, a 3-arm placebo controlled, randomized clinical trial of oral daily tenofovir (TDF) or co-formulated emtricitabine (FTC)/TDF among HIV-1 serodiscordant couples to assess its efficacy for HIV-1 prevention.
- Couples received a package of HIV-1 prevention services including counseling and free condoms and completed interviewer-administered questionnaires about demographic and partnership characteristics, sexual behavior, contraceptive use and medical history.
- HIV-1 seroconversion was measured monthly.
- Contraceptive use was measured by self-report during monthly study visits by HIV-1 uninfected women and quarterly by HIV-1 infected women; male monthly exposure to contraception was based on the woman's quarterly report that was linked to his quarterly visit and visits during the 2 prior months.
- Cox proportional hazards models (and exact logistic regression when 0 seroconversions): Exposure=randomization arm; Outcome=HIV-1 seroconversion; Interaction term=DMPA use*randomization arm.
- Adjusted models controlled for PrEP adherence (< or ≥ 80% of expected doses taken, according to pill counts), number of sex acts with study partner in the past month, any unprotected sex with study partner.

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RESULTS

Participant characteristics	HIV-1 uninfected women		HIV-1 uninfected men	
	DMPA N=486	No effective contraception N=910	DMPA N=565	No effective contraception N=1677
Active PrEP arm	318 (65.4)	600 (65.9)	366 (64.8)	1145 (68.3)
Age, years	30.0 (26.0-35.0)	34.0 (28.0-39.0)	34.0 (29.0-40.0)	34.0 (29.0-41.0)
Marital status	484 (99.6)	900 (98.9)	556 (98.4)	1639 (97.7)
Partnership duration, years	10.6 (6.0-15.9)	11.7 (5.3-18.9)	6.6 (3.1-11.8)	5.3 (2.2-10.4)
# children	3 (2-5)	3 (1-5)	2 (1-3)	1 (0-3)
# sex acts with study partner, past month	4 (2-8)	4 (2-7)	4 (3-8)	4 (3-8)
# unprotected sex acts with study partner, past month	0 (0-0)	0 (0-0)	0 (0-1)	0 (0-1)
Any sex with additional partner, past month	2 (0.4)	3 (0.3)	72 (12.7)	246 (14.7)
Infected with HSV-2	390 (82.6)	762 (86.0)	354 (64.0)	1041 (63.6)
CD4 count, HIV-1 infected male partner (cells/mm^3)	467 (356-596)	453 (352-583)	549 (404-746)	523 (391-699)
Viral load (log$_{10}$), HIV-1 infected partner	4.2 (3.4-4.7)	4.2 (3.4-4.7)	3.8 (3.1-4.3)	3.8 (3.0-4.4)



[1]From Baeten JM et al. 2012 NEJM.

CONCLUSIONS

- PrEP efficacy was high among women who used DMPA (71% efficacy) and men whose female partners used DMPA (90% efficacy) and not different from efficacy observed in the subgroups with exposure to no hormonal contraception or the full subgroups of women and men.
- For women and men who live in areas of high HIV-1 risk and choose to use DMPA, PrEP use would offer substantial HIV-1 protection and could counter balance the potential detrimental effect of DMPA on HIV-1 risk.
- Development of multipurpose products that are co-formulated to prevent pregnancy and HIV-1 acquisition is very important for women's health.

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