Characteristics of Breakthrough Chlamydia Cases among Cisgender Women Assigned to Doxycycline Postexposure Prophylaxis

1277

Jenell Stewart[1], Lauren R. Violette [3,4,5], Felix O. Mogaka[6], Victor Omollo[6], Deborah Donnell[7], Josephine Odoyo[6], Elizabeth A. Bukusi[6,8,9]* and Jared M. Baeten[9]*, for the dPEP Kenya Study Team; *joint authorship.

Hennepin Healthcare Research Institute[1] and Department of Medicine, University of Minnesota[2], Minneapolis, United States; Departments of Medicine[3], Obstetrics and Gynaecology[8], and Global Health[9], University of Washington, Seattle, United States; Department of Population Medicine[4], Harvard Medical School, and Harvard Pilgrim Health Care Institute[5], Boston, MA, United States; Centre for Microbiology Research, Kenya Medical Research Institute (KEMRI), Kisumu, Kenya[6]; Fred Hutchinson Cancer Center, Seattle, United States[7].

BACKGROUND

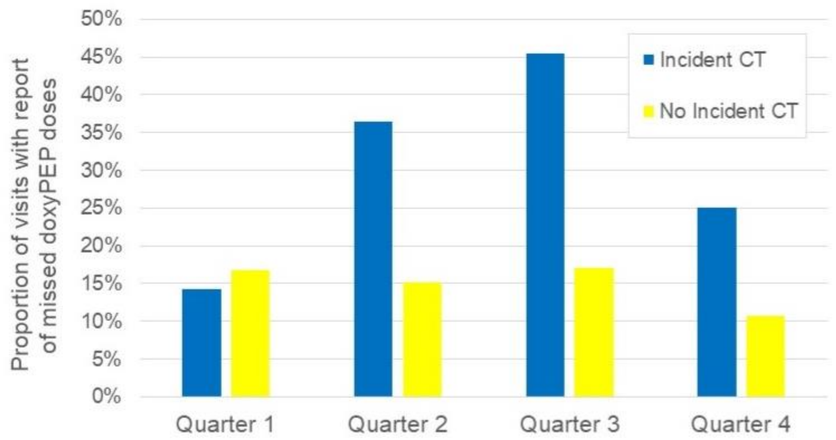
Doxycycline postexposure prophylaxis (PEP), taken within 72 hours of condomless sexual exposure, did not reduce incident bacterial STIs among cisgender women with 85 incident cases of chlamydia including 35 among those assigned to doxycycline PEP in the dPEP Kenya Study; use of doxycycline in this trial was low.

METHODS

We describe 35 breakthrough cases of incident *Chlamydia trachomatis* among 32 participants assigned to doxycycline PEP (n=224) within an open-label randomized trial among 449 cisgender women aged 18-30 years in Kisumu, Kenya. Participants returned quarterly over one year for STI testing and behavioral surveys for a total of 854 visits when participants were assigned to take doxycycline PEP and 753 visits when not on a medication hold. Covariates potentially associated with incident *C. trachomatis* detection were assessed using Poisson regression using GEE.

RESULTS

Doxycycline PEP was inconsistently taken during the 30 days prior to visits with breakthrough *C.* trachomatis detection with 11/35 (31.4%) reports of one or more missed doses and 6/35 (17.1%) reports of not taking any doxycycline.



Visits with report of recently missed doxyPEP doses				
	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Incident CT	1/7 (14%)	4/11 (36%)	5/11 (46%)	1/4 (25%)
No incident CT	34/202 (17%)	27/179 (15%)	29/171 (17%)	18/168 (11%)

Breakthrough chlamydia was associated with missed doses of doxyPEP.

Table: Characteristics of incident *Chlamydia trachomatis* diagnoses among participants assigned to take doxycycline PEP (n=224) in the dPEP Kenya Study.

	Incident chlamydia cases (35 visits)	Follow-up visits without chlamydia (819 visits)	Unadjusted RR (95% CI)	Unadjusted p-value
Age <24 years~				
Yes	24/398	374/398	2.50 (1.26-4.94)	**0.0084**
No	11/456	445/456		
Number of sexual partners* Median [IQR]	1 [1-2]	1 [1-3]	0.92 (0.83-1.02)	0.1216
Number of vaginal sex acts* Median [IQR]	24 [12-36]	24 [10-36]	0.99 (0.99-1.00)	0.1380
New sexual partner*				
Yes	5/201	196/201	0.54 (0.21-1.41)	0.2072
No	29/627	598/627		
Transactional sex*				
Yes	7/240	233/240	0.64 (0.28-1.44)	0.2787
No	28/614	586/614		
Forced sex*				
Yes	1/4	3/4	6.17 (1.09-34.86)	0.0393
No	33/815	782/815		
Condom use with last vaginal sex				
Yes	10/198	188/198	1.28 (0.63-2.61)	0.5001
No	22/557	535/557		
Report missed doses of doxyPEP^	11/119[+]	108/119[+]	2.66 (1.31-5.43)	**0.0071**
Yes	22/634[+]	612/634[+]		
No				

~at baseline
*in the prior 3 months
^in the prior 30 days
[+] participant study visits during a medication hold did not report on missing doses

CONCLUSIONS

Detection of incident *C. trachomatis* among participants assigned to take doxycycline PEP occurred in the setting of a range of experiences with sexual exposures and self-reported doxycycline PEP use. **Age less than 24 years and missed doses of doxycycline PEP were associated with incident *C. trachomatis* in women.**

FUNDING

US NIH Grant Funding (R01AI145971, K23MH124466, P30AI027757)

CONTACT

Jenell.Stewart@hcmed.org

ACKNOWLEDGEMENT

We thank the women who volunteered to participate in this study for their dedication.

DISCLOSURES

JMB is an employee of Gilead Inc outside of this work.