

TITLE

Characteristics of HIV seroconversions in ImPrEP, a large PrEP implementation study in Latin America

PRESENTER

Brenda Hoagland

AUTHORS

[B. Hoagland](#)<sup>1</sup>, C.F. Caceres<sup>2</sup>, R.I. Moreira<sup>1</sup>, K.A. Konda<sup>2</sup>, H. Vega-Ramirez<sup>3</sup>, I.C. Leite<sup>4</sup>, J.V. Guanira<sup>3</sup>, S. Bautista-Arredondo Vermandere<sup>5</sup>, M.R. Benedetti<sup>1</sup>, C. Pimenta<sup>6</sup>, V.G. Veloso<sup>1</sup>, T.S. Torres<sup>1</sup>, B. Grinsztejn<sup>1</sup>, ImPrEP Study Group

INSTITUTIONS

<sup>1</sup>Instituto Nacional de Infectologia Evandro Chagas, Fundação Oswaldo Cruz, Rio de Janeiro, Brazil, <sup>2</sup>Universidad Peru Heredia, Lima, Peru, <sup>3</sup>Instituto Nacional de Psiquiatria Ramón de la Fuente Muñiz, Mexico City, Mexico, <sup>4</sup>Escola Nacion Pública, Fundação Oswaldo Cruz, Rio de Janeiro, Brazil, <sup>5</sup>Instituto Nacional de Salud Pública (INSP), Cuernavaca, México da Saúde, Brasília, Brazil

**BACKGROUND:** Number of HIV cases continues to rise among young (18-30 years) gay, bisexual, and other men who have sex with men (MSM) and transgender women (TGW) in Latin America. ImPrEP was a PrEP implementation study conducted in Brazil, and we describe characteristics of HIV seroconversions in ImPrEP by country.

**METHODS:** Eligible MSM and TGW (HIV-negative, ≥18 years, reporting 1+ risk criteria) were screened and enrolled on the study and received a 30-day oral TDF/FTC PrEP supply. Follow-up visits were scheduled 4 weeks post-enrolment and quarterly thereafter. Testing for HIV was performed at all visits. We compared demographic (at enrollment) and behaviour (last visit prior to seroconversion) characteristics using chi-square or exact tests for the contingency tables and Kruskal Wallis tests for medians.

**RESULTS:** From February 2018-June 2021, 9509 MSM/TGW were enrolled (Brazil: 3928 [41.3%]; Mexico: 3288 [24.6%]; Peru: 2283 [24.1%]). 76.0% were diagnosed with HIV during 12,185.25 person-years of follow-up. Overall, 76.0% were young, 82.7% non-white, and 70.2% secondary education or more. The median number of partners was 5 (IQR:2-15); 70.2%, 92.2% and 85.6% reported receptive anal sex, inconsistent condom use and incomplete PrEP adherence, respectively. The median number of days between dispensation and HIV diagnosis was 360 days, higher in Brazil (541 days) and lower in Mexico (242 days). The median HI diagnosis was 12,257 copies/mL, lower in Mexico (3680 copies/mL) and higher in Peru (50100 copies/mL). Viral mutations K70 (1.8%) and M184V/I (10.5%) were observed (Table).

Table. Characteristics of HIV seroconversion in the ImPrEP study by country.

	All N = 104 n (%)	Brazil N = 24 n (%)	Mexico N = 18 n (%)	Peru N = 62 n (%)	p-value
Gender (cisgender man)	93 (89.4)	22 (91.7)	18 (100.0)	53 (85.5)	0.29
Median Age at enrollment (years)	24 (21-30)	24 (21-29)	30 (23-33)	23 (20-29)	0.11
Aged 18-30 years at enrollment	79 (76.0)	18 (75.0)	10 (55.6)	51 (82.3)	0.07
Race (Non-White)	86 (82.7)	15 (62.5)	16 (88.9)	55 (88.7)	0.02
Education (more than secondary)	74 (71.2)	19 (79.2)	17 (94.4)	38 (61.3)	0.01
Number of sex partners Median (IQR)	5 (2-15)	4 (1-15)	7 (2-15)	5 (2-15)	0.82
Receptive condomless anal sex	73 (70.2)	17 (70.8)	5 (27.8)	51 (82.3)	<0.001
Inconsistent condom use	95 (92.2)	20 (83.3)	16 (94.1)	59 (95.2)	0.15
Binge drinking	43 (41.4)	13 (54.2)	5 (27.8)	25 (40.3)	0.27
Stimulant use	13 (12.5)	4 (16.7)	4 (22.2)	5 (8.1)	0.16
Incomplete self-reported PrEP adherence (missed any PrEP pills in the past 30 days)	89 (85.6)	20 (83.3)	12 (66.7)	57 (91.9)	0.03
Days from first PrEP dispensation to HIV diagnosis, Median (IQR)	360 (186-581)	541 (244-770)	242 (108-331)	360 (245-560)	0.02
First HIV viral load after diagnosis; Median (IQR) copies/mL	12,257 (851-114,118)	7727 (387-54,311)	3680 (700-80,750)	50,100 (1070-156,000)	0.02
HIV genotyping with valid results Mutations (valid results)	57 (54.8)	11 (45.8)	7 (38.9)	39 (62.9)	0.12
K65	1 (1.8)	1 (9.1)	0 (0.0)	0 (0.0)	0.32
K70	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	---
M184V/I	6 (10.5)	1 (9.1)	2 (28.6)	3 (7.7)	0.23

**CONCLUSIONS:** We observed poor adherence among MSM and TGW who seroconverted during the ImPrEP study. Long term adherence should be an appropriate strategy to overcome adherence barriers observed among young MSM and TGW in Latin America.

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