

Factors associated to incident sexually transmitted infections among men who have sex with men and transgender women on oral PrEP in Latin America: the ImPrEP study



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Introduction

- In 2019, the global incidence of sexually transmitted infections (STI) was 9,536 cases *per* 100,000 person-years.¹
- STI incidence has steadily increased in Latin America, with a high burden among sexual and gender minorities, including gay and other men who have sex with men (MSM) and transgender women (TGW).^{2,3,4}
- Regional expansion of HIV pre-exposure prophylaxis (PrEP) programs leads to potential improvement of STI screening, strengthening a combination prevention approach.⁵

This work aimed to identify factors associated with STI diagnosis after PrEP initiation during the ImPrEP study.

Methods

- ImPrEP was a prospective, single-arm, open-label, multi-centric oral PrEP implementation study that enrolled 9,509 MSM and TGW in Brazil (n=3,928), Mexico (n=3,288) and Peru (n=2,293).⁴
- Participants were enrolled from February 2018 to December 2020, and followed-up until June 2021.⁴
- For this analysis, we included ImPrEP participants who collected any bacterial STI test (syphilis, chlamydia [CT] or gonorrhoeae [NG]) at least once after PrEP initiation (follow-up).
- STI testing for syphilis (*Treponema pallidum* rapid test, followed by VDRL/RPR), CT and NG detection (*Abbott Real Time CT/NG Assay*) in self-collected anal swabs were performed at baseline and during follow-up on a quarterly basis for syphilis and yearly for CT/NG.⁴
- Incident syphilis was defined as an increase of two titers of VDRL/RPR compared with the previous test. Incident CT and NG were defined as any positive result following a negative one.
- The outcomes of interest were the first occurrence of any bacterial STI episode during follow-up. And the occurrence of recurrent STI diagnosis.
- We used Cox proportional hazard model to identify factors associated with first diagnosis of any STI and the occurrence of recurrent STI (p-value<0.05).

References

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Results

- 7,646 participants were included in the analysis (Figure 1), among whom 30.7% were diagnosed with a bacterial STI during ImPrEP follow-up (n=2,350).
- Participants showed high PrEP adherence before first STI episode (82.3% had MPR>0.6, n=1,925/2,350).
- Higher odds of a bacterial STI diagnosis during ImPrEP follow-up were seen among participants aged ≤ 30 years, with previous post-exposure prophylaxis (PEP) use, multiple sex partners or condomless receptive anal sex prior to enrollment, adequate PrEP adherence or diagnosed with any bacterial STI at enrollment (Figure 2).

Figure 1. Study flowchart

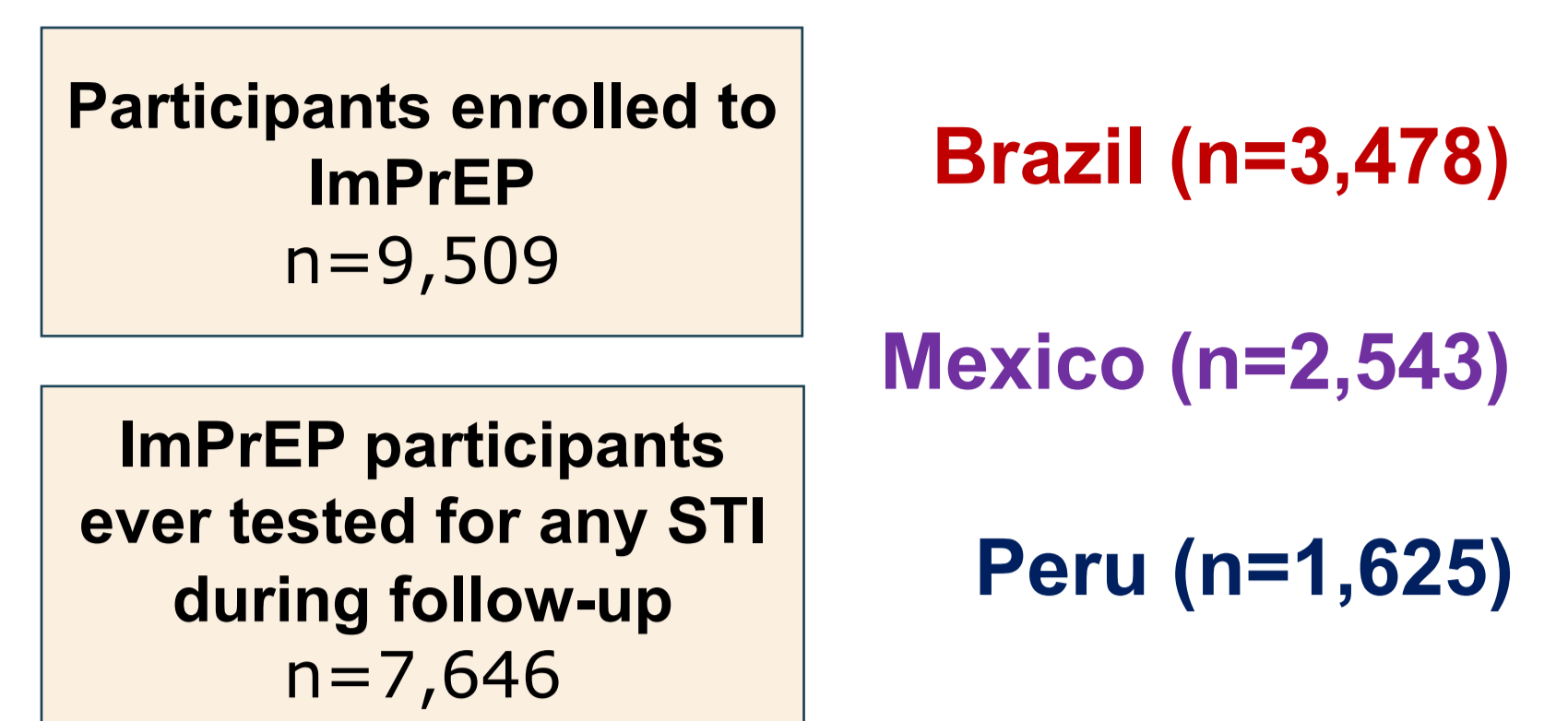


Table 1. Behavioral characteristics of ImPrEP participants diagnosed with a bacterial STI at enrollment and during study follow-up (N=2,350)

	Baseline visit	First STI diagnosis visit
Number of sex partners¹		
Median (IQR)	8 (3,20)	5 (2,12)
0-1	255 (10.9%)	362 (15.4%)
2-3	367 (15.6%)	485 (20.6%)
>3	1,728 (73.5%)	1,503 (64%)
Condomless receptive anal sex²	1,731 (73,7%)	1,140 (48.5%)
Use of stimulant drugs¹	503 (21.4%)	400 (17%)
Use of poppers¹	566 (24,1%)	430 (18,3%)
Binge drinking¹	1,555 (66.2%)	1,276 (54,4%)

¹ In last 3 months, ² In last 6 months at baseline visit and in last 3 months at first STI diagnosis visit

- Comparison of behavioral characteristics of participants with an incident STI suggests similar patterns between the enrollment visit and the moment of first STI diagnosis (Table 1).
- After the first diagnosis of a bacterial STI, 28.5% participants had a recurrent STI episode (n=670).
- Recurrent episodes of STI were associated with the same factors as those of the first STI diagnosis during follow-up, except from age category (Figure 3).

Figure 2. Factors associated to first STI diagnosis during ImPrEP follow-up

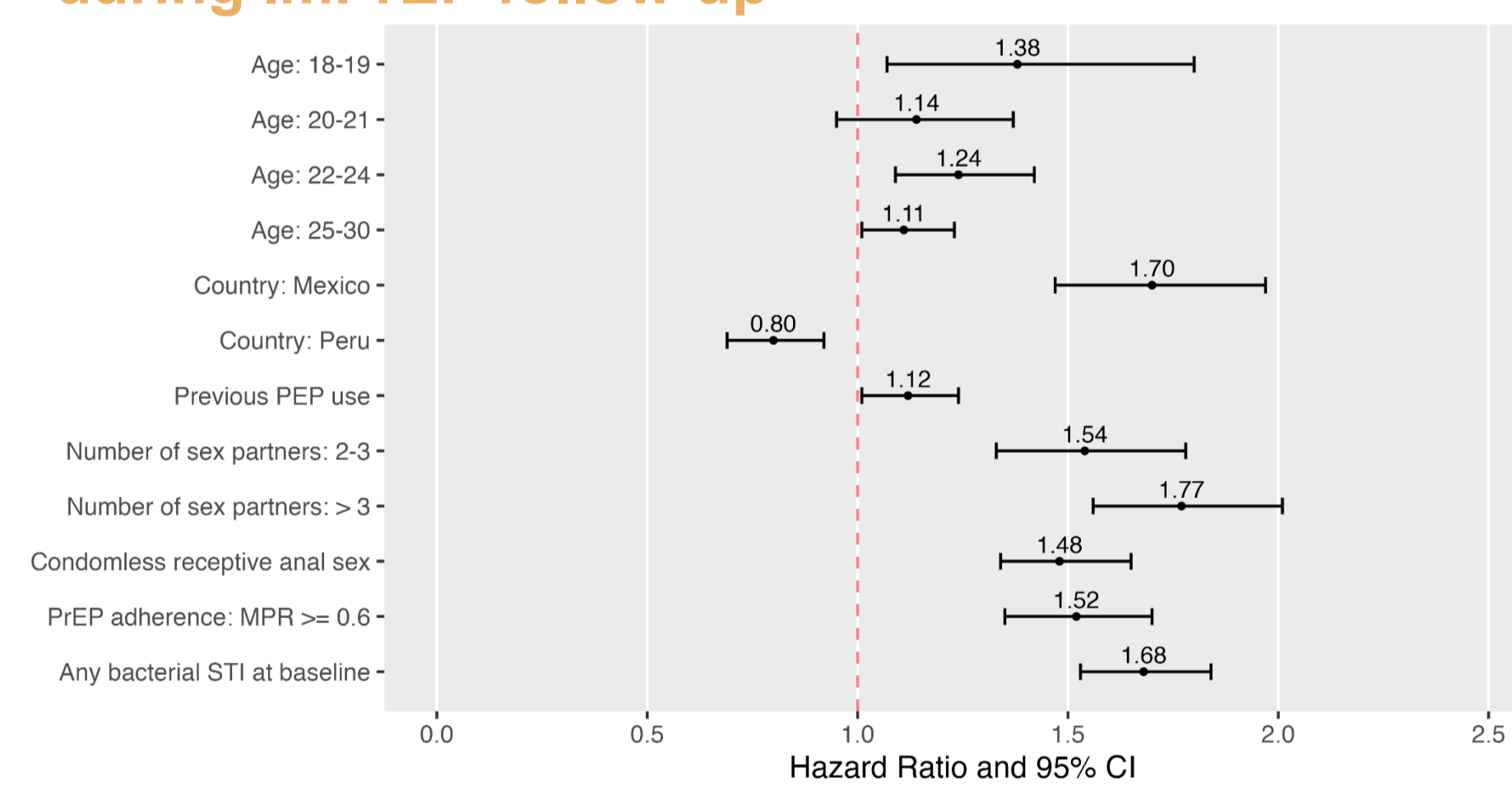
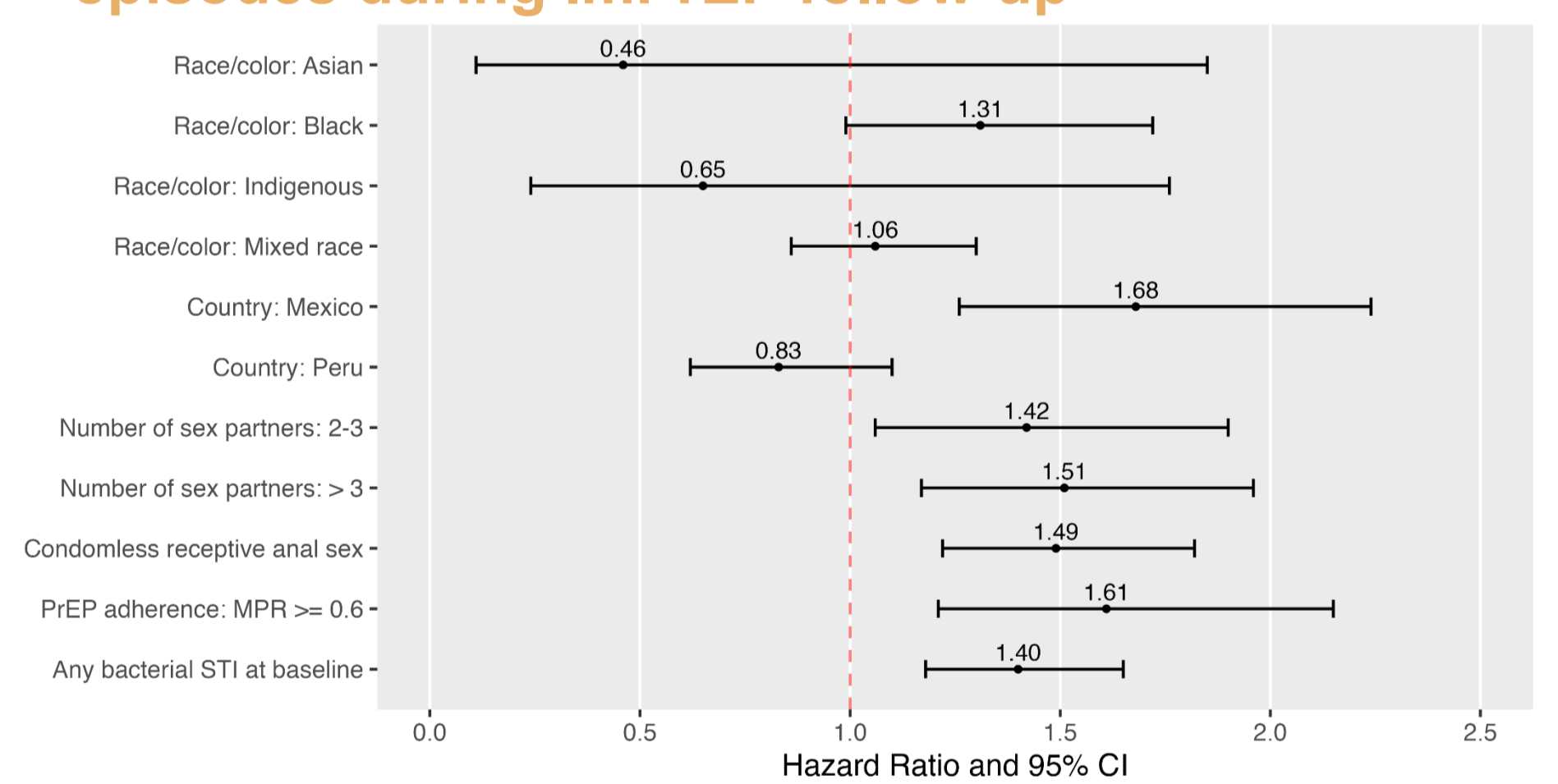


Figure 3. Factors associated to recurrent STI episodes during ImPrEP follow-up



Conclusions

- Identifying factors associated with incident STI among PrEP users might contribute to further understanding its transmission dynamics, which is of special importance considering new bacterial STI biomedical prevention strategies currently in the pipeline.
- Further studies are needed to understand why younger ages (≤ 30 years) were associated with first STI diagnosis, but not recurrent episodes. PrEP initiation might have been the first opportunity to include sexual health assessments and STI testing for study participants, contributing to increasing awareness on existent prevention methods.
- Our findings revealed that individuals diagnosed with any STI during follow-up were already highly vulnerable at baseline, thus not suggesting changes in sexual behavior or a risk compensation pattern after PrEP initiation.
- In this sense, PrEP proved to be an essential strategy to prevent further HIV and bacterial STI transmission under the combined prevention approach.

