COMPREHENSIVE EVALUATION OF PRE-EXPOSURE PROPHYLAXIS IN CLINICAL PRACTICE: A MULTIVARIABLE APPROACH TO DETERMINANTS OF USE

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INTRODUCTION

Pre-exposure prophylaxis (PrEP) has become established as a cornerstone strategy in the prevention of HIV among high-risk populations. Its effectiveness depends on factors such as treatment adherence, clinical and microbiological monitoring, as well as the identification and management of concomitant sexually transmitted infections (STIs).

OBJECTIVES

PRIMARY OBJECTIVE

Evaluation of the **effectiveness of and adherence to PrEP**, as well as assessment of its impact on HIV prevention.

SECONDARY OBJECTIVES

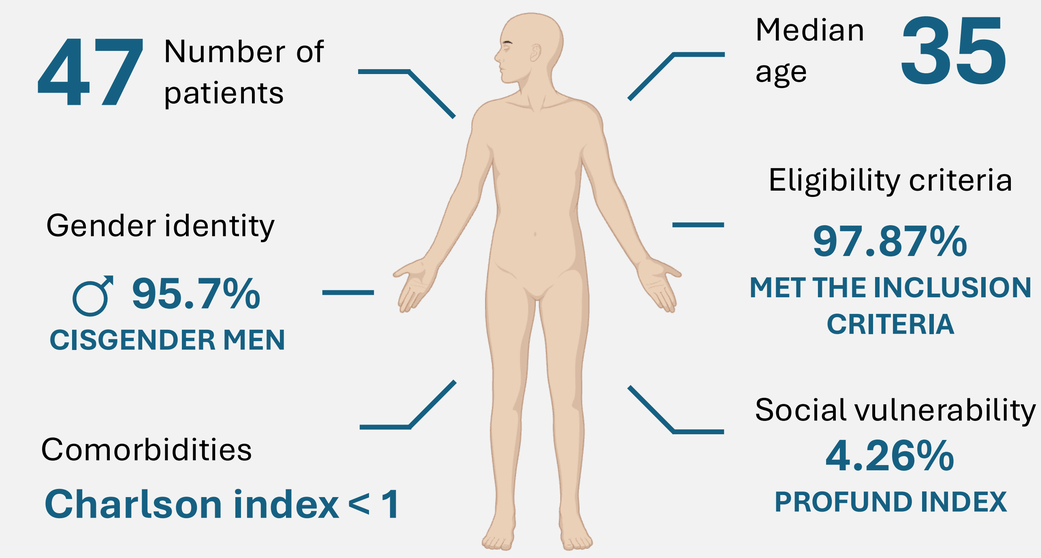
(I) Characterization of the **clinical and demographic profile** and comorbidities of the population, (II) Verification of **compliance** with eligibility criteria, (III) Evaluation of the **incidence of sexually transmitted infections** (STIs), and (IV) Assessment of tr**eatment safety**

METHODOLOGY

Observational and retrospective study of PrEP users between January 2022 and December 2024. Variables included demographic data, eligibility criteria, comorbidities, analytical and microbiological follow-up, adherence, interactions, and tolerance. Logistic regression tests and mean comparisons were used to determine associations between variables. A p-value <0.05 was considered statistically significant.

RESULTS

All users reported having sex with men. 6.38% were involved in prostitution and 14.89% practiced chem-sex.



Serum creatinine (0.95 ± 0.46 g/dL) **and phosphorus** (3.43 ± 1.76 g/dL) **remained stable in all users** (p > 0.05). No patient had a history of neoplasms, liver disease, or major cardiovascular events.

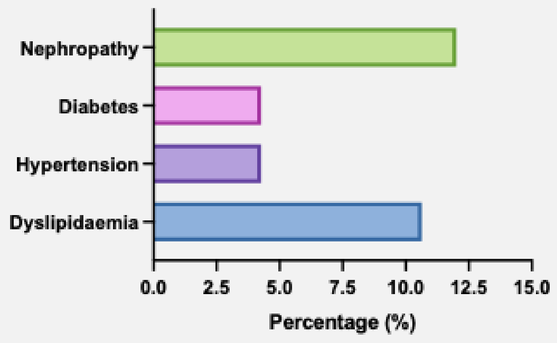


Figure 1. Prevalence of key comorbid conditions in the study cohort.

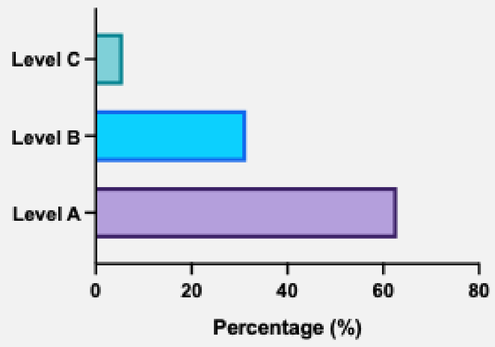


Figure 2. Treatment adherence levels (A, B, C) according to the SMAQ questionnaire.

The mean time from the Internal Medicine consultation to initiation of prophylaxis was 12.11 ± 8.63 days, with a **mean treatment duration of 14.74 ± 10.50 months**. In the last two years, 8.51% of patients discontinued prophylaxis. In addition, 63.30% of patients were receiving concomitant home treatment, of whom **10.64% met the criteria for polypharmacy**. Drug interactions were detected in 10.64% of patients at the first pharmaceutical consultation, mainly with the use of nonsteroidal anti-inflammatory drugs (NSAIDs).

It was identified that **53.19% of patients had experienced at least one STI in the previous year**. All diagnosed STI cases were successfully treated, and no HIV infections were recorded during the observation period.

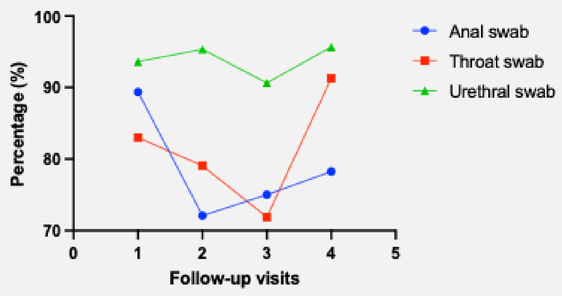


Figure 3. Percentage of negative swabs (anal, throat, and urethral) across follow-up visits.

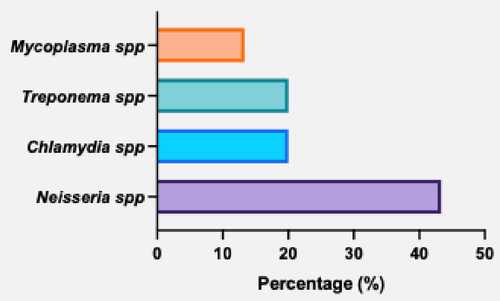


Figure 4 Percentage of negative swabs (anal, throat, and urethral) across follow-up visits.

Throughout the follow-up period, an overall **downward trend in ITS** was observed, albeit with some variability over time.

The predominance of users with **high adherence (94.3% with adherence ≥ 85%)** is noteworthy. In contrast, adherence estimated from electronic records is lower (90.66%), although **23.40% of users did not meet the predetermined follow-up criteria**: low adherence (14.89%), lack of analytical follow-up (6.38%), and failure to attend appointments (2.13%)

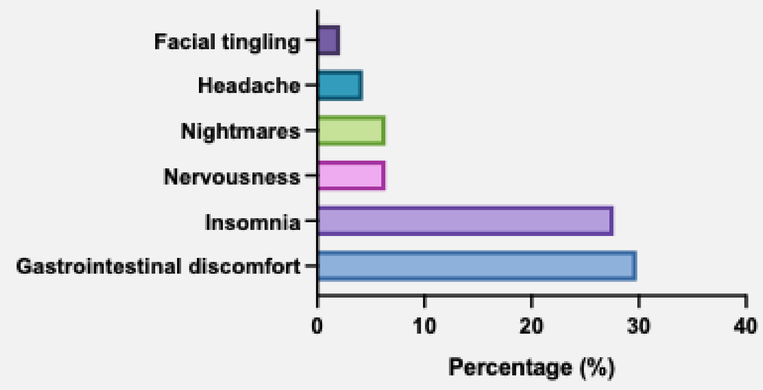


Figure 5. Percentage of adverse effects associated with PrEP use, categorized by type in the study cohort.

In terms of tolerability, **42.55% of patients experienced some adverse effects**, all of which were self-limiting and occurred within the first month of treatment.

CONCLUSIONS

PrEP is a key strategy in HIV prevention, the success of which depends on continuous monitoring, treatment adherence, and complementary measures for the prevention of STIs. The results highlight its effectiveness and safety, although regular follow-up is recommended. These findings reinforce the importance of close monitoring and the use of additional strategies, such as condom use and sexual health education, to optimize its effectiveness.

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