

# Enfermedades Infecciosas y Microbiología Clínica

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### ABSTRACT

*Introduction:* HIV pre-exposure prophylaxis (PrEP) consists of administering antiretroviral drugs to seronegative individuals with high risk practices. The aim of the study was to describe the characteristics of recent seroconverted HIV patients in order to determine the profile of the appropriate candidates for PrEP.

*Methods:* A descriptive study of all patients diagnosed with HIV infection in 2014, and who had achieved a documented negative serology over the previous 12 months. A specific form was completed to determine the sociodemographic, behavioural, and clinical features, with complementary tests being performed for other sexually transmitted infections.

*Results:* Almost all (98.4%) of the 61 recent seroconverted were men who have sex with men, and aged between 20 and 39 years (88.5%). They also had a background of sexually transmitted infections (80.3%), performed multiple and unprotected sexual practices (82.7%), and under the effect of recreational drugs (87%).

*Conclusions:* The evaluation of the risk factors for HIV infection in seronegative patients should enable the appropriate candidates for PrEP to be identified.

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## ¿A quién proponer la profilaxis preexposición al virus de la inmunodeficiencia humana?

RESUMEN

*Introducción:* La profilaxis preexposición (PrEP) al VIH consiste en administrar fármacos antirretrovirales a personas negativas para el VIH con prácticas de riesgo. El objetivo del estudio fue describir las características de los serconvertores recientes al VIH para conocer el perfil de los candidatos a quienes proponer PrEP.

*Métodos:* Estudio descriptivo de todos los pacientes diagnosticados de VIH durante 2014, con serología negativa documentada en los 12 meses previos. Se pasó un cuestionario estructurado para conocer características sociodemográficas, conductuales y clínicas, y se realizó despistaje de otras ITS.

*Resultados:* El 98,4% de los 61 seroconvertores recientes eran hombres que tenían sexo con hombres, de 20 a 39 años (88,5%), con antecedentes de ITS (80,3%) y múltiples parejas con las que mantenían sexo sin preservativo (82,7%), bajo el efecto de drogas recreativas (87%).

*Conclusiones:* Evaluar el riesgo para el VIH de los pacientes seronegativos permite identificar a los candidatos idóneos a quienes proponer la PrEP.

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### Introduction

Pre-exposure prophylaxis (PrEP) for HIV is a new preventive tool that consists of administering antiretroviral drugs to people negative for HIV (seronegative) with significant risk behaviours, in order to reduce the likelihood of acquiring the infection.

Several randomised placebo-controlled clinical trials have confirmed that daily oral PrEP is safe and effective.<sup>1</sup> Tenofovir disoproxil fumarate (TDF) or TDF plus emtricitabine (FTC), in a daily oral regimen, significantly reduces HIV incidence in all transmission categories: men who have sex with men (MSM), transsexual people, heterosexual (HTX) men and women, serodiscordant HTX couples and injecting drug users (IDUs).<sup>2–4</sup>

The FDA approved the indication for PrEP with TDF/FTC in 2012.<sup>5</sup> The Centers for Disease Control and Prevention (CDC) have recommended the daily use of one tablet coformulated with 300 mg of TDF and 200 mg of FTC, due to its rapid diffusion and high concentration in the rectal and genital tract.<sup>6,7</sup> The PROUD study,<sup>8</sup> conducted at 13 sexually transmitted infection (STI) clinics in England, found the same preventive efficacy with daily PrEP that the IPERGAY study<sup>9</sup> found with a pre- and post-coital "on-demand" regimen. The effectiveness of PrEP is closely correlated with the degree of adherence to PrEP.<sup>2,9</sup>

The WHO recommends offering daily oral PrEP to people who have a "substantial" risk of acquiring the infection and who belong to population groups with an HIV incidence higher than 3 per 100 people per year, together with other preventive measures such as promotion of the use of a condom, screening for other STIs, access to early diagnosis and universal antiretroviral therapy (ART). In these population groups, it is estimated that PrEP is cost-effective compared to ART throughout life.<sup>10</sup>

Follow-up of patients not infected with HIV with risk factors for acquiring the infection enables people who should be offered PrEP to be identified.

The objective of our study was to determine the sociodemographic characteristics, behavioural habits and clinical indicators of recent seroconverters (SCVs) to determine the profile of candidates for PrEP.

### Material and methods

In this study, people with documented negative serology in the 12 months prior to being diagnosed with HIV were considered recent SCVs. At an STI clinic in Madrid in 2014, 307 patients were diagnosed with HIV infection; of them, 61 (19.9%) were recent SCVs. A descriptive study was conducted of the socio-demographic, behavioural and clinical characteristics of these 61 recent SCVs. All of them were prospectively given a structured and validated epidemiological questionnaire in order to determine their sociodemographic information, sexual practices, frequency of condom use, history of STIs throughout their sex life, prior negative serology results for HIV, blood donations and toxic habits. The complementary tests performed included screening for other STIs: syphilis (ELISA and TPPA), gonorrhoea (Gram staining, culture in Thayer-Martin medium and PCR), infection with *Chlamydia trachomatis* and genital herpes (PCR), and hepatitis C virus (ELISA).

The statistical analysis was performed using SPSS PASW Statistics 18.0.

### Results

98.4% of the recent SCVs had more than one negative test performed throughout their life: 50% had 2–5, 46.7% had 6–15 and 3.3% had more than 15. 23% of the patients (n = 14) had donated blood. 9.8% (n=6) of the recent SCVs had received post-exposure prophylaxis (PPE) at some point.

98.4% (n = 60) were men. 85.2% were 20–39 years old, and 11.5% were 40–49 years old (range: 17–59 years old).

73.8% (n = 45) were Spanish, 19.7% (n = 12) were Latin American, 3 were European and one was American. 100% of the patients reported that they had been infected in Spain.

98.4% (n = 60) were MSM, 3 were sex workers and one was an HTX woman. None was an IDU. 59% of the patients reported more than 100 sex partners in the course of their lives, and 36.1% of them (n = 13) reported more than 500 sex partners in the course of their lives.

89.3% had anal sex without a condom with stable partners, and 76% had anal sex without a condom with occasional partners. Just one patient used a condom in oral sex. 9.8% (n=6) of the SCVs practised anal fisting.

80.3% (n = 49) had a history of STIs and 47.5% (n = 29) had concomitant STIs when they were diagnosed with HIV (Table 1).

88.5% (n=54) had used recreational drugs in the last year; of them, 87% (n=47) had engaged in unprotected sexual practices under the effect of these substances. The most commonly used drugs, from most common to least common, were: alcohol "in excess" (90.7%), poppers (51.9%), cocaine (40.7%), cannabis (37%), ecstasy (25.9%), gamma-hydroxybutyric acid (GHB) (18.5%), ketamine (13%) and mephedrone (13%). The drugs with the strongest association with engaging in unprotected sexual practices were: mephedrone (100%), GHB (100%), poppers (96.3%), ketamine (85.7%), cocaine (77.3%), alcohol "in excess" (65.9%) and ecstasy (53.8%) (Fig. 1). Among the recreational drug users, 38.8% shared snorting utensils.

Table 1

History of sexually transmitted infections and sexually transmitted infections concomitant with HIV diagnosis in recent seroconverters.

| Sexually transmitted infections | History            | Concomitant        |
|---------------------------------|--------------------|--------------------|
|                                 | % (n)<br>80.3 (49) | % (n)<br>47.5 (29) |
| Syphilis                        |                    |                    |
| Total                           | 42.9 (21)          | 27.6 (8)           |
| LSUD                            | 61.9(13)           | 62.5 (5)           |
| Early LS                        | 14.3 (3)           | 25 (2)             |
| Secondary                       | 14.3 (3)           | 12.5 (1)           |
| Primary                         | 9.5 (2)            | 0(0)               |
| Gonorrhoea                      |                    |                    |
| Total                           | 44.4 (22)          | 48.3 (14)          |
| Rectal                          | 18.2 (4)           | 35.7 (5)           |
| Urethral                        | 77.3 (17)          | 21.4(3)            |
| Pharyngeal                      | 4.5 (1)            | 42.9 (6)           |
| Chlamydia                       |                    |                    |
| Total                           | 16.3 (8)           | 34.5 (10)          |
| Rectal                          | 62.5 (5)           | 100 (10)           |
| Urethral                        | 25(2)              | 0(0)               |
| Pharyngeal                      | 12.5 (1)           | 0(0)               |
| LGV-rectal                      | 4.1 (2)            | 3.4(1)             |
| Genital herpes                  | 6.1 (3)            | 3.4(1)             |
| Hepatitis C                     | 2(1)               | 3.4(1)             |
| Hepatitis B                     | 10.2 (5)           | 0(0)               |
| Condylomas                      |                    |                    |
| Total                           | 28.6 (14)          | 4(2)               |
| Genital                         | 14.3 (2)           | 100(2)             |
| Perianal                        | 85.7 (12)          | 0(0)               |
| Pediculosis pubis               | 30.6 (15)          | 0(0)               |
| Scabies                         | 8.2 (4)            | 0 (0)              |

LSUD, latent syphilis of unknown duration.

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