

Case Report

Clinical Case: Detection of an acute infection Fiebig 1 in a PrEP protocol patient at the Condesa Specialized Clinic

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Abstract

This report describes the detection of a patient in the initial phase of Fiebig I. This patient was included in the PrEP protocol of the Condesa Specialized Clinic (C.S.C.). The analysis of the measured parameters shows that the viral load and the fourth generation test (Ag / Ac) were crucial to identify the evolution of the infection, from the initial phase of Fiebig I to II, in a period of 17 days.

Keywords: Pre-exposure prophylaxis (PrEP); Fiebig classification

Introduction

Pre-exposure prophylaxis (PrEP) is a new biomedical HIV intervention for prevention, in which people who are not infected by the HIV virus, but with high probabilities of contracting it, can prevent the disease. For someone who is constantly exposed to this disease, such as men who have sex with men (MSM) or injection drug users, PrEP represents a powerful tool to prevent HIV infections.

Studies have shown that PrEP reduces the risk of contracting HIV from sex by 99%, if taken daily; and by 74%, among injection drug users. It is important to note that its effectiveness decreases considerably when it is discontinued randomly, and that it is not suitable for the prevention of other sexually transmitted infections [1].

In recent years, more emphasis has been placed on detecting infected individuals at earlier stages. This is because early diagnosis

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Citation: Ruiz-González V, Sánchez MH, González-Rodríguez A, Vizcaino G, Bautista-Arredondo S (2021) Clinical Case: Detection of an acute infection Fiebig 1 in a PrEP protocol patient at the Condesa Specialized Clinic. AIDS Clin Res Sex Transm Dis 8: 036.

Received: June 21, 2021; **Accepted:** June 30, 2021; **Published:** July 07, 2021

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allows physicians to start the treatment immediately. It is important to note that this way, the transmission mechanisms of the HIV virus are interrupted. On the other hand, the knowledge of these mechanisms, the viral dynamics and the immune response of infected patients, allows the advancement of research to develop vaccines and, eventually, eradicate the disease [2].

According to the original Fiebig classification, acute infection is defined as the period between the acquisition of viral infection and the generation of anti-HIV antibodies, which is accompanied by an increase in viremia. Recent infection, which includes the acute phase, represents a period of approximately 6 months, characterized by effective transmission of the virus. People who are in the acute or recent stages play a very important role in the spread of the disease [3].

Clinic Case

A 21 years old male who is candidate to receive PrEP, denies any symptom of acute viremia. He referred occasional use of cocaine and injected methamphetamine, and the use of growth hormone to increase muscle mass, for 18 months. The age of his first sexual intercourse was 16 years old. He is a man who has sex with other men and has had a stable sexual partner for the last 18 months. Moreover, he has been in virological control. He referred to have had 2 irregular partners and his last risky relationship with his stable partner had been on September 6, 2019.

In his initial PrEP visit, the third and fourth generation rapid HIV test results were non- reactive. A plasma sample of the patient was processed for the determination of viral load. This technique was carried out using plasma pools that include 6 to 10 samples. In this case, a pool that included 7 samples was run, getting 77 copies/mL. After analyzing each sample individually, the patient's sample was the only one with a detectable viral load. A subsequent follow-up was carried out, and the results are shown in table 1.

From the analysis of data in Table 1, it is inferred that at the first sampling, the patient was in the initial phase of Fiebig I, between 5.5 and 6 days after acquiring the infection. The patient reported to be asymptomatic, although he had an ascending rate of replication that characterizes the acute viremia. The second sample corresponds to Fiebig stage I, with a viral load large enough to be detected, even at dilutions greater than 1:25. At the time of the third sample, the patient reported the classic symptoms of acute viremia such as headache, fever and general discomfort. At this point, the patient had already evolved to Fiebig stage II, a period time smaller than 7 days.

Conclusion

Using fourth generation tests and viral load, a patient was identified in the initial stage of Fiebig I. Thus, the clinical evolution of the patient from the aforementioned phase to that of Fiebig II was observed, in a span of 17 days. Finally, we concluded that the algorithm

	Sampling I	Sampling II	Sampling III
Date	September 20, 2019	October 01, 2019	07 October, 2019
Fourth generation rapid test	Non Reactive	Non Reactive	Non Reactive
Abbott Ag/Ab	Non Reactive	Non Reactive	Non Reactive
Chemiluminescence Lecture S/CO	0.15	0.87	12.6
Western Blot	Negative	Negative	Negative
Viral Load RT-VIH 1 (copies/mL)	567	191,542	4,130,551

Table 1: Evolution of the parameters measured in the PrEP protocol for a patient in the acute phase.

for inclusion of participants for the PrEP protocol is effective, since it makes possible to adequately identify candidates who are in the acute or recent phase.

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