Editorial

Pre-exposure prophylaxis (PrEP) means more exposure?

During the last Conference for the Prevention of Sexually Transmitted Diseases of the Centers for Disease Control and Prevention (CDC-USA), in 2018, the advent of a new era in the fight against HIV infection was very clear[1].

The Pre-exposure prophylaxis (PrEP) through prophylactic prescription of emtricitabine and tenofovir disoproxil fumarate is clearly established and administered (adopted in 2012 in the United States), and the discussion about it is already in the stage of evaluating results and adjusting protocols.

Many professionals are still reticent about standardizing the use of PrEP even though its effectiveness has already been proved.

One of the criticisms is the worry about a great increase in the incidence of other Sexually Transmitted Infections (STI), as users could no longer use condoms.

In the United States, the protocol that establishes the criteria for PrEP prescription according to the risk for HIV infection also recommends other control of STI, such as screening every six months (every three months in case of a previous diagnosis of syphilis, gonorrhea or *Chlamydia*)[2].

However, data from several studies point to follow-up rates below 50% after six months of prescription, which would make this control through screening impractical[3,4].

Most patients lose contact with the health service before four months of prescription, not attending the first return.

Without this guarantee of a long-term monitoring, there is an international concern about the real impact on the increase of these diseases, and if the user's education alone (as recommended in the Brazilian Protocol), associated with the laboratory screening, would be enough to stop the increase of STI with the popularization of the use of PrEP.

The increase in risk behavior after prescription was described in several works during the CDC Conference in August 2018.

In Washington State, men who have sex with men (MSM) have declared an increase in some risky behaviors, such as: sex without condom, sex with discordant or unknown HIV status, anonymous sex, increase in the number of sexual partners, increase in the number of anal sex episodes and receptive anal sex[5].

These data reported at the CDC Conference are in line with those presented in the literature, showing the expansion of risk behavior associated with the increased incidence of STI in PrEP users[6].

The Canadian study of Nguyen et al.[7] showed the increase of the diagnosis of gonorrhea, *Chlamydia* and syphilis along the monitoring, as well as the incidence of three or more STI in the same patient.

Another noticeable fact is that there was a great frequency of contact with new partners via internet, which is an action that seems to facilitate other risk behaviors, such as the acquaintance with a greater number of anonymous sex partners, among others. This finding agrees with data from other studies that also show a greater behavioral change among users of dating Apps (geosocial networking)[8].

Even though the group that searches for STI clinics declare more exposure behaviors and previous STI diagnoses at the time of PrEP prescription, there are still the so-called reward behavior, which is the strengthening of risk habits when using HIV prophylaxis[9].

The Montaño group[10] have studied the incidence of STI in users of a clinic in Seattle and noted that 35% of the users were diagnosed with at least one STI (*Chlamydia*, gonorrhea and/or syphilis) in the year prior to PrEP prescription, and this number rose to 49.2% in 12 months, confirming the influence of this behavioral change.

This finding seems to be already creating a stigma, especially among MSM, where those who declare to be in use of PrEP are now considered promiscuous, especially in online communities and dating Apps.

The behavior change would not solely explain the large increase in the incidence of syphilis, when compared to other STI expansion in users of antiretroviral drugs. There are studies showing changes in the immune response to *Treponema pallidum*, mostly causing imperfection in the inflammatory response, in the mitochondrial function, and in the activation of macrophages[11,12].

This alert has already been reported by the editorial of this very journal — Passos et al.[11] —, given the impact that any aggravation of syphilis epidemic may have in the increase of congenital syphilis' incidence and the consequent delay in its banishment.

The solution to this problem, clearly multifactorial, is linked with the education of health system professionals and users, in addition to more research to produce guiding data to break down barriers that prevent a long-term follow-up and provide a correct STI tracing[13-15].

This editorial by no means wants to discourage PrEP prescription, as prevention is already available and it's not necessary that people at risk get infected with HIV because of the potential threat of acquiring other STI.

We want, in fact, to stimulate the construction of evidence-based protocols and policies of education and control of STI in times of PrEP, PEP (post-exposure prophylaxis) and HAART (antiretroviral therapy) which are therapies that have changed the status of HIV infection in the world and require us to adapt our vision and actions.

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