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# HIV and SARS-Cov-2 the Dilemma

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**Opinion**

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## Opinion

At a time when the COVID-19 pandemic is still at its peak with an expanding global activity, patients with HIV infection have always been a worrying population because, with a chronic disease causing immune system depletion, they are at high risk for serious diseases and poor prognosis. However, although there are no large studies directed at this population yet published both in terms of incidences and mortality that compare them with the non-HIV population, the observation and reports carried out mainly in Spanish and Italian centers on their "resident" population, leads to the conclusion, for the time being, that among HIV patients, the risk of infection and its severity for COVID-19 range between 1 and 8%, and will not be different from what has been observed for non-HIV population. These enhance that affected population were medicated with ARTc, had a controlled HIV infection, with lymphocytes TCD4$^{+}$> 200 cells/mL and HIV RNA negative. However, the usual risks associated with comorbidities identified for the non-HIV population remain, adding the risks associated with the poor socio-economic conditions to which some of these patients are exposed.

Regarding these data and searching for a guidance to implement measures for prevention, treatment and better outcomes, several hypotheses were considered to explain the results presented while they and are still in debate. First, the fact that strong measures have been taken to inform the need and importance of compliance to containment measures and the use of personal protective equipment by different local and global health organizations, together with the creation of priority corridors for the care of these patients, either in face-to-face or by telemedicene, outside the normal COVID-19 circuits, with careful and personalized guidance for the symptomatic patient thus reducing their risk of exposure may explain the low incidence of cases but does not explain the low severity and mortality verified which are below expectations [1-6].

Second, the use of drugs of different classes, which have an impact on the viral replicative activity of SAR-CoV-2, and which are used to treat HIV is another hypothesis pointed out. Knowing that drugs like Lopinavir/ritonavir or other protease inhibitors, although these have a lower or even residual compared activities, or even Tenofovir a nucleotide reverse transcriptase inhibitor, have a great impact on SARS-COV- 2 activity and with many HIV patients medicated with these drugs in their therapeutic regimens, we could extrapolate that the use of these therapies, in a way, prevented the occurrence of more serious cases/events than expected, or could act as prophylactics. However, when used in the non-HIV population, the effectiveness of these treatments has not been proven in the same order of magnitude [7-9].

Third, another perspective to be analyzed, in order to understand what was observed in this patient population, comes from the notion of the dynamics of the HIV cycle itself, during the process of primary infection. In this case, it is important to remember that HIV leads to the production of different types of antibodies, namely different types of IgGs, so we need to understand the behavior of SARS-CoV-2 to these antibodies. With the real possibility of cross antibodies between them, a closer look to assess the impact of them in the COVID-19 infection is needed, because it is noted that even in situations of poor control or decompensation of HIV, there was no increase in the number of severe cases or mortality due SARS-CoV-2.

Much more must be studied in this population so we can create guidelines for the prevention and develop guidance to deal with this pandemic in HIV patients. At this stage, the

need for larger studies and large-scale reports is necessary, and therefore it is important to systematically collect data and results to be worked on later.

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