SARS-CoV2 pandemic: SARS-CoV2 seroprevalence and impact on HIV suppression in PLWH

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Background
Lockdown, as a strategy to control SARS-CoV2 pandemic, has been implemented in several countries including Italy. Modena HIV Clinic shut down from 24th February to 4th May, 2020. The aim of the present study was to assess the prevalence of SARS-CoV2 positive serology among people living with HIV (PLWH) and to investigate the impact of the pandemic on HIV virological control in this population.

Materials and Methods
SARS-CoV2 serological assays were performed in PLWH attending Modena HIV Clinic after 4th May 2020, as part of HIV follow up which includes HIV viral load and CD4+ assessment as well. HIV virological blips were defined as HIV RNA>40 cp/ml after two consecutive undetectable HIV RNA in previous assays. Serological tests of the general population were obtained from local Hospital laboratory. A descriptive analysis was done to address differences between groups: continuous variables were compared using non-parametric analysis (Mann Whitney), while categorical variables were compared using Chi-square test. The level of statistical significance was set for p-value less than 0.05. Multivariate analysis was performed using stepwise logistic regression method.

Results
Until 17th June, 2020 a total of 52072 serological assays were obtained from 30286 people (Table 1). Four hundred ninety-six (1.6%) were performed in PLWH, thus the 28.7% (496/1733) of the whole Modena HIV cohort was tested. SARS-CoV2 serological tests were positive in 1577 people (5.2%), 17 (3.4%) in PLWH and 1560 (5.2%) in HIV-negative people, respectively (p value=0.072; Chi square test). Figure 1 shows SARS-CoV2 seropositivity stratification by age. Regarding logistic multivariate analysis, age (OR 1.007; 95% CI 1.004-1.010; p<0.001) and foreign nationality (OR 1.070; 95% CI 1.181-1.591; p<0.001) were the only determinants for being SARS-CoV2 seropositive, while HIV serological status was not associated (OR 0.627; 95% CI 0.385-1.021; p=0.061). Table 2 shows the main characteristics of PLWH stratifying them between SARS-CoV2 seropositive and SARS-CoV2 seronegative, highlighting nationality as the only significant determinant.

Virological blips were observed in 3.7% (15/406) of patients in cART. One patient stopped treatment and the remaining had virological blips <1000 cp/ml (range 41-225 cp/ml); none of them was SARS-CoV2 positive.

Conclusions
Our data show no statistically significant difference in SARS-CoV2 seroprevalence between HIV-positive and HIV-negative people. Still, the increase in viral blips is worrisome, as it may reflect decreased adherence to cART or difficult drug supplying due to lockdown.

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Figure 1: SARS-CoV2 seropositivity frequency for age groups

Table 1: Baseline characteristics. Age is expressed as median (IQR)

Table 2: PLWH characteristics