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COVID-19 PANDEMIC AND CONTINUUM OF CARE IN A COHORT OF PEOPLE LIVING WITH HIV (PLWH): WILL WE HAVE A PRICE TO PAY IN THE FUTURE?

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Background

The COVID-19 pandemic had a considerable impact on Italian healthcare system which faced the emergency of the epidemic by ensuring continuum of care. First of all, many clinics, included HIV health-care providers, have experienced interruptions to their usual care models because they were reassigned to fight against COVID-19 outbreak[1,2]. Second, severe restrictive measures, including quarantine and social distancing, put PLWH at risk for interrupting follow-up and treatment refill, increasing also the possibility to HIV trasmission[1-4]. In addition, an high percentage of PLWH, when specifically questioned, considered them self more frail towards the risk to acquire SARS COV 2 infection; as a consequence they avoided accessing health care, even for urgent concerns, to limit COVID-19 exposure, decreasing the number of visit[5]. Lastly, the COVID-19 pandemic presented further challenges to HIV screening and new diagnosis[6]. The aim of this study was to measure the effect that any forced changes on scheduled clinical follow up due to COVID-19 pandemic carried out on HIV suppression and the continuum of care among the PLWH attending a HIV clinic in Catania, Italy.

Methods

This is a retrospective observational study. We registered the number of virological and immunological blood test (generally scheduled every sixth months) performed during the period before during and after COVID-19 pandemic in a cohort of PLWH comparing the number of clinical access/year, the trend of median CD4 cells count and the percentage of samples with detectable and undetectable HIV RNA viremia. Data were retrieved from administrative and paper clinical files.

Categorical variables are expressed as count (percentages), while continuous variables as mean ± SD when normally distributed or median (IQR) when non-normally distributed. T-test for paired data and ANOVA test were applied to find any statistically significant difference between normally distributed variables. Wilcoxon test was applied to find any statistically significant difference over time among non-normally distributed variables. Statistical significance level was set at a p value < 0.05, confidence interval (CI) was set at 95%. Statistical analysis was performed with SPSS 28.0 for MacOS. Graphs were designed with Graphpad Prism 9.0.

Results

Data from 763 patients, 25% cis-women, were analysed. Median age was 49.6 (IQR 39.7–57.6) (fig. 1). A total of 4099 HIV-RNA determinations were made during the study period, in particular 1217 in 2019, 970 in 2020, 1272 in 2021 and 640 in first six months of 2022. The number of blood sampling per PLWH/year moved from 2.15 tests in 2019, to 1.61 in 2020, 1.89 in 2021 to 1.12 in 2022 (first six months) (fig. 2).

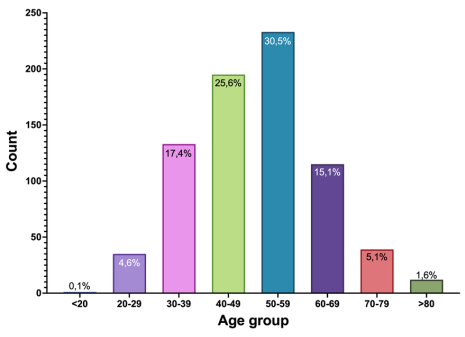

Figure 1. Distribution of PLWH by age in the 2021

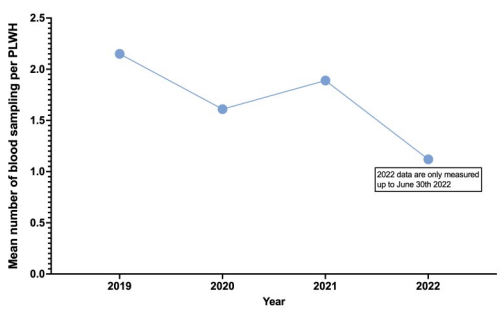

Figure 2. Mean of number of CD4$^+$ and HIV-RNA determinations per PLWH by year

A remarkable reduction of determinations during the months corresponding to the peaks of the COVID-19 pandemic was observed. In fact, we observed a raise in missed visits at the onset of the pandemic (n=0) with a compensatory increase in Jul 2020 (n=198) and again in Jan 2021 (n=3) with a new increase in Mar 2021 (n=197) (fig. 3).

The median value of CD4$^+$ cell count moved from 648 cells/µl (IQR 460-835) in 2019 to 619 cells/µl (IQR 433-839) in 2020 and 691 cells/µl (IQR 489-900) in 2021 and 703 cells/µl (IQR 506-944) in 2022 with a significant increase from 2020, period in which especially vulnerable and naïve patients were strictly monitored, to 2021 and 2022 ($p<0.05$). Furthermore, although the percentage of PLWH with HIV-RNA <200 copies/mL decreased to 80% and 60% respectively in Mar and May 2020, onset of pandemic, when exclusively naïve and recent diagnosed subjects were tested, in the following months we recorded an increase in the monitoring of PLWH virological suppressed (88% in Jun 2020). Lastly, we observed no difference in the number of new HIV diagnosis during 2019 and 2020 (n=36) despite the difficulty of access to the HIV testing.

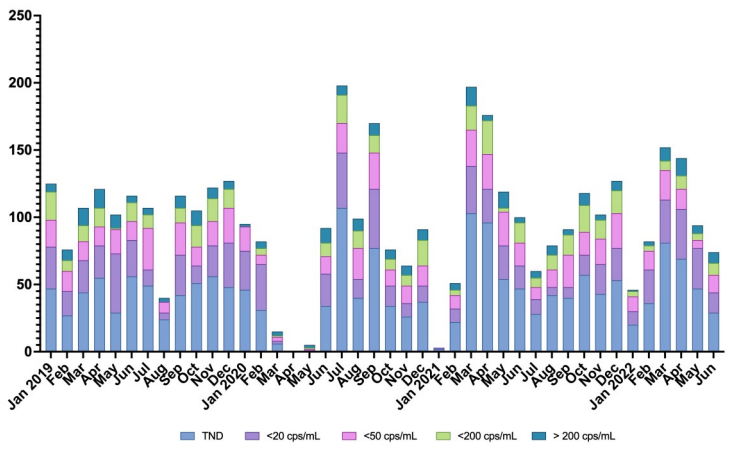

Figure 3. Cumulative number of viral load determinations per month and distribution of detectable and undetectable viremia

Conclusion

The COVID-19 pandemic had the potential to disrupt HIV care continuum outcomes among PLWH[1,2,3]. The severe restriction measures limited the mobility of everyone; although many PLWHs were more limited due to stigma (the fear to declare the condition of HIV infection to overcome a checkpoint) and the attempt to avoid the health care transmission of SARS-CoV-2, a slight decrease in the access to our clinic and consequently a reduction in number of appointments[3] and blood examinations were observed. In fact globally we observed just a 20% reduction of follow-up during 2020; the resilience shown by healthcare systems, with the irreplaceable support of NGO and volunteers to guarantee the punctual drug refill, was highlighted by a high prevalence of maintained viral suppression and a significant increase of median value of CD4$^+$ cell count in the last two years. Finally, despite the reduction in the number of access to the clinic and the restriction measures, the number of new diagnoses per year remained unchanged. In conclusion, to day we can wrap up that “the price is right”.

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