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LETTERS TO THE EDITOR

Late diagnosis of HIV before and during the COVID-19 pandemic: preliminary insights from an Infectious Diseases Unit in Apulia

Diagnosi tardiva di HIV prima e durante la pandemia da COVID-19: informazioni preliminari da una Unità di Malattie Infettive in Puglia

Keywords: COVID-19, late diagnosis, HIV, AIDS, pandemic

Abstract

During the COVID-19 pandemic, many HIV outpatient clinics were temporarily closed or their activities were reduced. Similarly, many infectious disease wards were converted into COVID-19 Units. Thus, an increase in late HIV diagnoses was expected due to reduced access to testing, screening services and consultation with HIV infection specialists. A higher rate of late HIV diagnoses was reported during the COVID-19 pandemic compared with the period before COVID-19. We analyzed all consecutive individuals newly diagnosed with HIV in our Center between January 1, 2017 and September 30, 2022. We did not observe differences in terms of late HIV diagnoses and AIDS between the two periods.

Dear Editor,

Since its rapid spread in December 2019, the Coronavirus disease 2019 (COVID-19) pandemic has demonstrated a heavy impact on the healthcare services, particularly among the frail populations such as people living with HIV (PLWH) (1, 2). In Italy, many HIV outpatient clinics were temporarily closed or their activities were markedly reduced, especially in the first two waves between March and October, 2020. Moreover, many infectious disease wards were converted into COVID-19 Units. Consequently, an increase in late HIV diagnoses (LHDs) was expected, due to reduced access to testing, screening services and consultation with HIV infection specialists.

Regarding the above, a recent article reported a higher rate of LHDs during the COVID-19 pandemic compared with a period preceding the global spread of SARS-CoV-2 (3). In addition, the authors found a rose of CDC (Center for Diseases Control) stage C3, as well as an increase in LHDs among heterosexuals.

Similarly, we retrospectively analyzed all consecutive individuals newly diagnosed with HIV in our Center between January 1, 2017 and September 30, 2022. A total of 123 subjects were included: 73 new diagnoses between January 2017 and January 2020 were classified as BC (before-COVID-19) whereas 50 diagnoses between February 2020 and September 2022 were classified as DC (during COVID-19). Clinical characteristics of the patients are summarized in Table 1. Descriptive statistics were calculated for demographic, clinical, and laboratory characteristics of cases. Mean and standard deviation (SD) values were recorded for normally distributed variables, and the median and interquartile

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Table 1 - Clinical characteristics of 123 7ndividuals newly diagnosed with HIV

	Before COVID-19	During COVID-19	p
N.	73	50	
Male gender, n (%)	64 (87.7)	41 (82.0)	0.49
Age: years (mean, SD)	38.7±12.5	42.1±13.9	0.17
Country of origin:n (%)			
Italy	59 (80.8)	45 (90.0)	0.16
Africa	9 (12.3)	1 (2.0)	0.04
Eastern Europe	5 (6.8)	2 (4.0)	0.5
Asia	0	2 (4.0)	0.32
Route of transmission, n (%)			
MSM	34 (46.5)	22 (44.0)	0.77
Heterosexual intercourse	35 (47.9)	25 (50.0)	0.82
IDU	4 (5.5)	3 (6.0)	0.9
HIV diagnosis through (n, %)			
Hospital admission	26 (35.6)	12 (24.0)	0.17
Specialist care	47 (64.3)	38 (76.0)	0.17
CD4 count at diagnosis, cells/mm^3 (median, IQR)	259 (81-480)	302 (84-531)	0.83
CD4 count at diagnosis, n (%)			
< 50	14 (19.1)	8 (16.0)	0.65
50-199	19 (26)	11 (22.0)	0.6
200-349	10 (13.6)	8 (16.0)	0.72
350-500	13 (17.8)	8 (16.0)	0.79
> 500	17 (23.2)	15 (30.0)	0.4
HIV RNA at diagnosis, copie/mL (median, IQR)	64,000 (15,959-314,417)	70,654 (20,751-166,776)	0.23
AIDS at diagnosis, n (%)	23 (31.5)	10 (20)	0.15
Days from diagnosis to ART (median, IQR)	25 (13-61)	30 (12.2-67)	0.79
Type of ART, n (%)			
2 NRTI + INSTI	32 (43.8)	33 (66)	0.01
2 NRTI +PI	13 (17.8)	6 (12)	0.38
2 NRTI + NNRTI	14 (19.1)	2 (4)	0.01
1 NRTI + INSTI	3 (4.1)	6 (12)	0.09
None	11 (15)	3 (6)	0.12

Abbreviations: SD, standard deviation; n, number; IQR, interquartile range; MSM, men who had sex with men; IDU: injecting drug user; NRTI: Nucleoside reverse transcriptase inhibitor; INSTI: Integrase strand transfer inhibitor; PI: protease inhibitor; NNRTI: Non-nucleoside reverse transcriptase inhibitors

range (IQR) were recorded for non-normally distributed variables. The number and percentage were recorded for categorical variables. Differences between groups were analysed using the Chi-square test, t-test, or Mann–Whitney test, as appropriate. A p-value of <0.05 was considered to indicate significance.

Unlike the study of van Bremen et al. (3), we did not find a greater number of LHDs in the DC group. Conversely, in the BC group, stage CD4 cells count was lower (259 cells / μL vs 302 cells/μL) as well as the rate of individuals

with AIDS at diagnosis was higher compared with the DC group (31.5% vs 20%) albeit without statistical significance. No differences were found beetwen the two groups in terms of route of transmission, mode of diagnosis and hospitalization rates. Overall, most common opportunistic infections (OIs) were: Pneumocystis pneumonia (6/33, 18%), Cytomegalovirus disseminated disease (6/33, 18%), cerebral Toxoplasmosis (5/33, 15%) and Cryptococcal meningitis (5/33, 15%).

Among the BC patients, six were lost to follow-up, three were engaged in other Centers and two subjects died due to OIs before the initiation of antiretroviral therapies (ARTs). In the DC group, one patient died because of Cryptococcal meningitis before starting ART and two individuals were transferred to other Infectious Diseases Centers.

Interestingly, we did not observe new HIV diagnosis among the subjects who came from Africa in the DC group, probably due to the reduced screening campaigns among the migrants during the COVID-19 pandemic. Moreover, consistent with the international guidelines, we reported a major use of integrase strand transfer inhibitors-based (INSTI-based) ARTs as first ART regimens (4, 5).

The incidence of new HIV diagnoses in Italy has been continuously reducing since 2012, primarily as a result of treatment as prevention (TasP), although the rate of LHDs has been cumulatively reduced since 2012, this decrease occured for LHD to a lesser extent than for non-late diagnoses. In fact, in 2020, 41% of people newly diagnosed with HIV infection had CD4 counts below 200 cells / μL and 60% with CD4 counts below 350 cells / μL (6). Our data reflect the national trend recently described (7).

In the last two years, we reported a decreased number of new HIV diagnosis. Undoubtely, the containment measures adopted by the government to deal with the COVID-19 emergency might have reduced the chances of transmission not only of SARS-CoV-2 but also of other infections, including HIV.

Conversely, the confinement measures and the limitations to the hospital access during the pandemic resulted in reduced testing services leading to a delay in HIV diagnosis and access to treatment. Although our ward was fully converted into a COVID-19 unit as soon as the first wave appeared, the HIV outpatient clinics and the HIV screenings remained active.

The long-term effects of the COVID-19 pandemic on the LHDs might not have been fully assessed yet. Indeed, it is likely that many new HIV diagnoses, escaped during the emergency, could soon manifest as LHD or even AIDS. Therefore, it is of paramount importance to increase efforts through screening campaigns, checkpoints and other initiatives in order to expand access to testing.

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