

The changing landscape of hospitalized PLWH: How the referral of cases in a center Italy ward changed during the SARS-CoV-2 pandemic

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Introduction

- A great number of cases of HIV infection is diagnosed late, often presenting with opportunistic infections or neoplasms.
- A timely diagnosis is essential to avoid the greater morbidity and mortality associated with AIDS-defining conditions.
- However, the SARS-CoV-2 pandemic led to a delayed access to diagnostic tests because of the increased burden of work that healthcare practitioner faced.
- The aim of our study was to investigate the impact of the SARS-CoV-2 pandemic on PLWH admitted in our ward because of AIDS or new diagnosis of HIV infection.

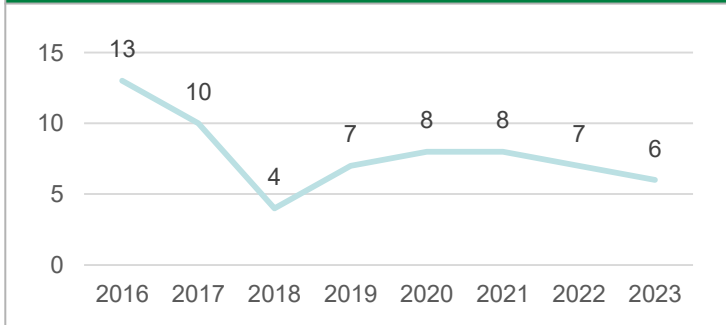
Study Design

- We conducted a retrospective observational analysis of patients admitted in our department (Clinica di Malattie Infettive e Tropicali, Azienda Ospedaliero-Universitaria delle Marche, Ancona).
- The period included in the study ranged from January 2016 to December 2023.
- The aim was to assess differences in clinical characteristics of patients admitted in the pre-pandemic period (2016-2019) and in the pandemic period (2020-2023).

Methods

- Demographical, clinical and laboratory characteristics all patients were collected through consultation of clinical records.
- Categorical variables were expressed as absolute numbers and their relative percentages, while continuous variables were expressed as median and interquartile range.
- Variables were compared using Chi square test or Fisher exact test for categorical variables and Mann-Whitney U-test for continuous variables.
- A p value ≤ 0.05 was considered to represent statistical significance.

Figure 1 Number of cases admitted in our ward for each year of the study



Results

- A total of 63 patients were identified. The number of cases admitted each year is depicted in **figure 1**.
- Characteristics of the populations are shown in **table 1**. The majority of patients (76%) were males, the median age was 50 years, and they were mostly from Italy (68%).
- A new HIV diagnosis was made in 40 patients (63%). Of the 23 patients with a known HIV infection, the median duration of HIV infection was 11 years and 18 patients had received antiretroviral therapy for a certain period but had a poor compliance or can't replenish their therapy supplies. The remaining 5 patients with a known HIV infection didn't start antiretroviral therapy of their own will. The median number of CD4+ cells at admission were 80/mm³.
- 87% of cases were diagnosed in a CDC C3 stage. The most frequent AIDS-defining events were *Pneumocystis jirovecii* pneumonia (11 cases), wasting syndrome (8 cases), lymphomatous disease, Cytomegalovirus disease (7 cases each) and tuberculosis (6 cases).

- The only significant difference between the two study periods was that in the 2020-2023 period patients presented with a lower CD4+ count ($p=0.044$).
- Although not significant ($p=0.053$), a greater number of East European patients were admitted in 2020-2023, probably due to the increase in the flow of migrants because of the Ukrainian crisis.

Conclusions

- Even in our small experience, the SARS-CoV-2 pandemic were impactful in determining a delay in the diagnosis of HIV infection. In fact, patients admitted in the 2020-2023 period showed a lesser CD4+ count compared with patients admitted in the pre-pandemic period.
- However, an influence of the Ukrainian-Russian war on delayed diagnosis cannot be ruled out, since we observed an increased number of East European patients in the 2020-2023 period. A thorough vigilance and fast track diagnostic testing would be necessary to allow Ukrainian refugees to

Table 1. Clinical characteristics of the studied population

Variable	Total (n=63)	2016-2019 (n=34)	2020-2023 (n=29)	p value
Male sex (n, %)	48 (76%)	29 (85%)	19 (66%)	0.066
Age (median, IQR)	50 (43-57)	49 (43-53)	50 (43-60)	0.407
Nationality (n, %)				0.242
Italian	43 (68%)	26 (76%)	17 (59%)	
East European	6 (10%)	1 (3%)	5 (17%)	0.053
African	12 (19%)	6 (18%)	6 (21%)	
Others	2 (3%)	1 (3%)	1 (3%)	
Heterosexual (n, %)	59 (94%)	33 (97%)	26 (90%)	0.229
IDU (n, %)	4 (5%)	2 (6%)	2 (7%)	0.869
New diagnosis (n, %)	40 (63%)	23 (68%)	17 (59%)	0.458
Years of HIV infection (median, IQR) *	11 (5-17)	8 (3-23)	12 (7-15)	0.646
ART exposure (n, %) *	18 (78%)	8 (73%)	10 (83%)	0.538
AIDS (n, %)	55 (87%)	29 (85%)	26 (90%)	0.604
CD4+ diagnosis, cells/mm ³ (median, IQR)	80 (24-169)	95 (39-206)	63 (14-156)	0.044
HIV-VL, cp/ml x 10 ³ (median, IQR)	273 (47-770)	254 (56-749)	305 (38-954)	0.834
AIDS defining event (n, %)				
Candidiasis	3 (5%)	2 (6%)	1 (3%)	0.651
CMV disease	7 (11%)	3 (9%)	4 (14%)	0.532
Cryptococcosis	1 (1%)	1 (3%)	0 (0%)	1
Wasting syndrome	8 (13%)	3 (9%)	5 (17%)	0.317
Kaposi Sarcoma	3 (5%)	2 (6%)	1 (3%)	0.651
Tubercular disease	6 (10%)	2 (6%)	4 (14%)	0.286
NTM disseminated disease	1 (1%)	0 (0%)	1 (3%)	1
Neurotoxoplasmosis	5 (8%)	3 (9%)	2 (7%)	0.778
Lymphomatous disease	7 (11%)	4 (12%)	3 (10%)	0.858
PJP	11 (17%)	7 (21%)	4 (14%)	0.479
PML	2 (3%)	0 (0%)	2 (7%)	0.208

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