Indirect HIV morbidity and mortality due to COVID-19

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Dear Editor,

We read with interest the article [1] reporting similar outcomes from COVID-19 (corona virus infectious disease) in people living with HIV (PLWH), compared to matched controls (patients matched for age, sex, race/ethnicity, and calendar week of infection).

Whether COVID-19 morbidity and mortality are worse in PLWH is still unclear, as there are contrasting findings in the literature so far [2-4]. Further data from large observational trials will most likely be needed to fully understand where, and with what nuances, HIV infection stands as a risk factor in COVID-19.

On this note, we would like to offer a different perspective on the repercussions of the pandemic on PLWH, which goes beyond the direct effects of COVID-19 illness.

At the end of the first European COVID-19 wave, we noticed an increased number of PLWH being admitted with advanced HIV disease/AIDS. We examined HIV inpatient admissions at Chelsea and Westminster Hospital, London, UK (a tertiary referral centre for HIV/oncology), between July and October 2020, and compared them to those within the same period in 2019 (Table 1).

Although there was a reduced absolute number of hospitalisations in the 2020 period, we observed a significantly higher proportions of admissions due to AIDS defining conditions ($p=0.023$). Whilst in 2019 26.5% of admissions were due to an AIDS defining illness (48% with an oncological diagnosis, 52% with an opportunistic infection, OI), in the 2020 period, over half of admissions were due to AIDS defining conditions (54%), with OIs and oncological diagnoses accounting for 72% and 28% of cases, respectively.

Moreover, among hospitalised patients in the 2020 period, we observed a higher proportion of new HIV diagnoses (16% vs 6%, $p=0.073$), lower CD4+ counts (median CD4+ 157 in 2019 versus 63 in 2020, $p=0.0076$) and higher HIV viral loads.

These findings suggest that patients presented to hospital with more advanced HIV disease in the second half of 2020, compared to the same time period in 2019. We believe this variation could be due to difficulty in accessing healthcare and/or reluctance to attend

healthcare facilities during the first wave of the COVID-19 pandemic and the inevitable lock-down, as observed in the HIV negative population [5-7].

Hence, when addressing the consequences of this pandemic on PLWH, it is important to consider the additional repercussions in accessing HIV testing and HIV diagnosis, and people linkage to care, ultimately translating into increased morbidity for PLWH.

Yours sincerely,

The Authors.

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Legend to Table 1:

Reasons for HIV inpatient admissions at Chelsea and Westminster Hospital

Table 1:

	Jul-Oct 2019	Jul-Oct 2020	*p*
Patients admitted	80	48	
New HIV diagnoses, n(%) **Patients with AIDS defining illness, n(%)**	5 (6.25%) 21 (26.5%)	8 (16.6%) 26 (54%)	0.073
Admissions due to AIDS/total Admissions n(%)	32/104 (31.7%)	35/65 (53.8%)	0.023
Characteristics of patients admitted with AIDS defining conditions:			
Median CD4, cell/mcL (IQRs) **Median CD4% (IQRs)**	157 (60-200) 12.8 (5.9-24.6)	63 (30-151) 5.8 (4.2-14.4)	0.0076 0.035
Patients with VL<50 cp/mL, n(%) **Patients with VL>50 cp/mL, n(%)** **Median HIV VL cp/mL (IQR)**	8 (38.1%) 13 (61.9%) 115 (19-63400)	8 (30.8%) 18 (69.2%) 123000 (19-935500)	0.23
Oncological conditions, n(%)	11 (47.8%)	8 (27.6%)	0.157
OI, n(%)	12 (52.2%)	21 (72.4%)	
- Invasive candida	2	1	
- Recurrent bacterial pneumonia	2	1	
- Cryptococcal meningitis	1	1	
- Neurotoxoplasmosis	0	3	
- *Pneumocystis jirovecii* pneumonia	4	4	
- Non Tubercular Mycobacteria	1	2	
- Tuberculosis	0	2	
- PML	0	1	
- HIV encephalopathy	2	5	
- Wasting Syndrome	0	1	