Descriptive account of 18 adults with known HIV infection hospitalised with SARS-CoV-2 infection

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Abstract.

Objective: To report on the clinical characteristics and outcome of 18 PLWH hospitalised with SARS-CoV-2 infection in a London teaching hospital.

Methods: The hospital notes of 18 PLWH hospitalised with SARS-CoV-2 infection were retrospectively reviewed alongside data concerning their HIV demographics from an established HIV Database.

Results: The majority, (16/ 18) had positive PCR swabs for SARS-CoV-2, two had negative swabs but typical COVID-19 imaging and history. Most were male (14/18, 78%), median age 63 years, (range 47-77). Two thirds were migrants, nine (50%) of BAME ethnicity. All were diagnosed with HIV for many years (range 8-31 years), and all had an undetectable HIV viral load (<40 copies/ml). The median CD4 prior to admission was 439 (IQR 239-651), and 10/16 (63%) had a CD4 nadir below 200 cells/mm3. Almost all (17/18) had been diagnosed with at least one co morbidity associated with SARS-Cov-2 prior to admission. 3/18 patients died. Non received mechanical ventilation. Hospital stay and clinical course did not appear prolonged- median 9 days.

Conclusions :Our data suggest that PLWH may not necessarily have prolonged or complex admissions to hospital when compared to the general hospital and national population admitted with COVID-19. Many had low nadir CD4 counts and potentially impaired functional immune restoration. The PLWH group were younger than generally reported for COVID-19 and the majority were male with multiple complex co-morbidities. These patients had frequent contact with hospital settings increasing potential for nosocomial acquisition, and increased risk of severe COVID-19

The incidence and course of COVID-19 disease due to SARS-CoV-2 in people living with HIV (PLWH) is uncertain, with little current evidence to suggest worse outcomes[1-3].

We report 18 PLWH, admitted to hospital with COVID-19 between March and April 2020. The majority, (16/18) had positive PCR swabs for SARS-CoV-2, two had negative swabs and no other respiratory pathogens isolated with typical COVID-19 imaging and history. Most were male (14/18, 78%), median age 63 years, (range 47-77). Two thirds were migrants, nine (50%) of BAME ethnicity of whom 8 were Black African and 1 Asian, (overall ICDC cohort 45% BAME). All were diagnosed with HIV for many years (range 8-31 years), and all had an undetectable HIV viral load (<40 copies/ml). The median CD4 prior to admission was 439 (IQR 239-651), and 10/16 (63%) had a CD4 nadir below 200 cells/$mm^{3.}$

All were on antiretroviral therapy (ART): three were receiving two-drug (dual) ART, one of whom died, and one protease inhibitor monotherapy; seven had Truvada or Descovy and four had abacavir/lamivudine within NNRT backbone; 11 included an Integrase Strand Transfer Inhibitor and five a protease inhibitor (all boosted darunavir).

Almost all (17/18) had been diagnosed with at least one comorbidity prior to admission (Table 1). These primarily related to cardio- and cerebro-vascular disease, diabetes, chronic kidney and pulmonary disease.

The median hospital stay was 9 days (range 1-40+, n=15); 1 patient remains an inpatient awaiting rehabilitation. Three (3/18) patients died (one at home 5 days after self-discharge, presumably COVID related); all were males over the age of 60 with multiple co-morbidities. Two were BAME and on dialysis, with additional comorbidities including diabetes, hypertension, ischaemic heart disease and restrictive lung disease. The other White patient had a previous CVA, COPD and pulmonary hypertension.

Three were on regular hospital haemodialysis and six others had attended hospital appointments or had admissions in the month prior to COVID19 admission, including one protracted stay with confirmed influenza A. Hospital acquired infection of SARS CoV-2 was confirmed in one patient who had been an inpatient for two months prior.

Two PLWH were admitted to ITU but neither received mechanical ventilation. One had a ceiling of care of non-invasive support due to end-stage renal failure and cardiovascular disease. Data is incomplete (15/18), however only 2 were admitted with severe SARS CoV-2, (WHO definition) one of whom died .No patient received SARS CoV-2 specific antiviral therapy or immunomodulatory treatment.

Our data suggest that PLWH may not necessarily have prolonged or complex admissions to hospital (median hospital stay 9 days) when compared to our general hospital population (7days), and national data (8 days)[4,5]. This is despite many having low nadir CD4 counts and potentially impaired functional immune restoration. The PLWH group were younger than generally reported and a high proportion were male and BAME[5].

The majority of PLWH admitted had multiple complex co-morbidities, with frequent contact with hospital settings increasing potential for nosocomial acquisition, and increased risk of severe COVID-19. The three deaths occurred in people with a pre-determined ceiling of care or were out of hospital. There is some encouragement to be gained for PLWH that no patients required ventilation or had a prolonged admission related to COVID-19.

References

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Table 1: Relevant Comorbidities in 18 PLWH admitted with SARS-CoV-2 infection

Treated Hypertension	7
Type 2 Diabetes	6
Previous Myocardial Infarction	4
Severe CKD (eGFR<15 mls/min)	4*
COPD	4
Previous CVA	3
Recent breast cancer diagnosis (not on chemotherapy)	1
CKD/Glomerulonephritis/on immunosuppression	1
Pulmonary Hypertension	1
Three or more above comorbidities present	***13***

Notes: *(3 on dialysis, 1 awaiting dialysis). CKD - Chronic Kidney Disease. CVA – cerebrovascular accident