High HIV prevalence in an early cohort of hospital admissions with COVID-19 in Cape Town, South Africa

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Introduction

The first cases of COVID-19 were detected in South Africa on 5 March 2020 and in Cape Town on 11 March.
Cape Town subsequently became the initial epicentre of COVID-19 in South Africa with an exponential increase in case numbers.
Many South Africans have risk factors for severe COVID-19 such as hypertension, diabetes and obesity.
South Africa has a high prevalence of HIV and TB and the impact of COVID-19 on these populations is still being determined.
Early observational data can provide valuable insight into the potential impact and mortality of COVID-19 in South Africa.

Objectives

To describe the clinical features, comorbidities and outcome of an early cohort of COVID-19 patients at a tertiary hospital in South Africa, with a specific emphasis on patients with HIV.

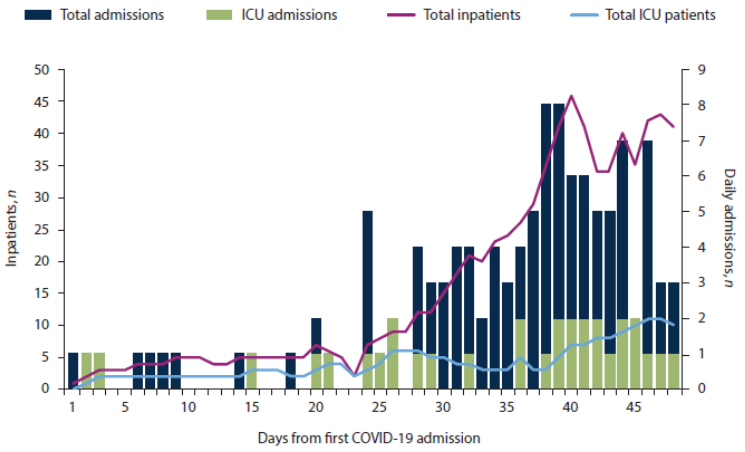

Figure 1: COVID-19 admissions over time. Day 1 coincides with 25 March 2020.

Table 1: Clinical characteristics of HIV+ and HIV- patients (*N*=113).

	HIV+ (*N*=24; 21.2%)	HIV- (*N*=89; 78.8%)	*p*-value
Demographics			
Age (years), mean	46.2	49.1	0.2
Male, *n* (%)	6 (25.0)	38 (42.7)	0.18
Female, *n* (%)	18 (75.0)	51 (57.3)	0.18
Symptoms, *n* (%)			
Cough	17 (70.8)	71 (79.8)	0.51
Haemoptysis	2 (8.3)	1 (1.1)	0.11
Dyspnoea	17 (70.8)	61 (68.5)	1.00
Fever	15 (62.5)	52 (58.4)	0.89
Sore throat	0	12 (13.5)	0.07
Loss of smell	1 (4.2)	10 (11.2)	0.45
Loss of taste	0	8 (9.0)	0.20
Diarrhoea	4 (16.7)	11 (12.4)	0.73
Abdominal pain	1 (4.2)	7 (7.9)	0.69
Chest pain	5 (20.8)	17 (19.1)	1.00
Headache	1 (4.2)	14 (15.7)	0.19
Malaise	4 (16.7)	12 (13.5)	0.74
Myalgia	5 (20.8)	24 (27.0)	0.73
Comorbidities, *n* (%)			
Hypertension	8 (33.3)	38 (42.7)	0.55
Diabetes	10 (41.7)	33 (37.1)	0.86
Dyslipidaemia	1 (4.2)	9 (10.1)	0.46
Obesity	5 (20.8)	27 (30.3)	0.51
Cardiac disease	1 (4.2)	5 (5.6)	1.00
Malignancy	0	1 (1.1)	1.00
Current TB	2 (8.3)	2 (2.2)	0.21
Previous TB	6 (25.0)	3 (3.4)	<0.01
Other chronic lung disease	2 (8.3)	4 (4.5)	0.61
Connective tissue disease	0	1 (1.1)	1.00
Chronic kidney disease	2 (8.3)	6 (6.7)	1.00

Methods

Single-centre descriptive study involving all patients age >18 years with a SARS-CoV-2 positive RT-PCR and radiological evidence of COVID-19 admitted to Tygerberg Hospital between 24 March and 11 May 2020.
Patients were identified from the COVID Unit's registry.
Data was extracted from hospital records, the NHLS TrakCare Web Results Viewer and the hospital PACS system for radiology.
All patients were followed up until discharge from hospital or death.

Results

Patient numbers increased steadily during the study period (Fig. 1) so that 116 patients were included, of whom clinical data was available for 113.
Baseline data including presenting symptoms and comorbidities are shown in Table 1. The most common symptoms were cough, shortness of breath and fever. The most common comorbidities were hypertension, diabetes mellitus and obesity. The prevalence of HIV was 21%. Of these, 76% had at least one other comorbidity. Current TB was uncommon (3.5%).
Most patients had bilateral reticular infiltrates on chest x-ray (77%).
Most patients (64%) were admitted to the general wards and 36% were admitted to ICU.
Overall mortality was 27% increasing to 48% in the ICU. Low P:F ratio; high WCC, neutrophil count, CRP, LDH and ferritin; and micronodular infiltrates on chest x-ray were strongly associated with death. Survival was similar for HIV positive and negative patients.

Discussion and Conclusion

In this small early cohort, we found similar characteristics to overseas populations.
The prevalence of HIV in our study was almost twice that of the Western Cape (12.6%), but these patients had similar presentations, comorbidities and outcomes compared to HIV- patients.

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