



VIRTUAL
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McGill University
Health Centre

Chronic Viral Illness
Service of the
Royal Victoria Hospital

**Service des maladies virales
chroniques**
Chronic Viral Illness Service



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Conflict of interest: None

BACKGROUND

The coronavirus disease 2019 (COVID-19) pandemic is a syndemic, comprising various overlapping epidemics

Worse health outcomes in people living with HIV (PLWH) with COVID-19 may partially be explained by social vulnerabilities and multimorbidity

We previously characterized PLWH at the Chronic Viral Illness Service (CVIS) in Montreal, Canada, who developed COVID-19 during the first wave of the pandemic. Many were migrants with occupational exposure risk for severe COVID-19 disease (*Fehr et al., AIDS Care 2021*)

OBJECTIVES

To report on the evolving risk profile and severity of COVID-19 infections during waves 2 and 3 of the pandemic

To compare results from this population and the general population in Montreal, to monitor the evolution of the pandemic and its effect on our clinic population

METHODOLOGY

Chart review of all PLWH followed at the CVIS with positive COVID-19 test or symptoms suggestive of COVID-19 during September 2020-August 2021

All CVIS staff (MDs, nurses, social workers, admin staff) were asked to report to clinic nurses cases of confirmed or suspected COVID-19

Demographic, clinical and HIV-related data was extracted from electronic medical records, in addition to potential COVID-19 exposures, symptoms and outcomes

As part of standard of care, clinic nurses followed up with patients via telephone to verify their clinical status, need for medical intervention and ensure adherence to public health measures

Also opportunity to confirm missing data elements (ie, date of symptom onset, symptoms, location/result of testing, exposures)

TABLE 1. SOCIODEMOGRAPHIC AND CLINICAL PROFILE OF PLWH INFECTED WITH SARS-CoV-2 (SEPTEMBER 2020–AUGUST 2021)

<i>Participant characteristics</i>	<i>N = 61</i>
Age in years, median [IQR]	51 [41, 57]
Gender, <i>n</i> (%)	
Male	39 (64%)
Female	22 (36%)
Ethnicity, <i>n</i> (%)	
Black	33 (54%)
White	11 (18%)
Hispanic	10 (16%)
Indigenous	4 (7%)
Others	3 (5%)
Immigration status, <i>n</i> (%)	
Canadian citizen	26 (43%)
Permanent resident	18 (29%)
Asylum seeker	15 (25%)
Visiting student	2 (3%)
Years in Canada, median [IQR]	14.5 [2, 32]
Highest level of education, <i>n</i> (%)	
College/grad school/diploma	26 (43%)
High school	19 (31%)
Elementary school	14 (23%)
No school	2 (3%)
Annual income, CAD \$, <i>n</i> (%)	
<15,000	24 (39%)
15,000–34,999	30 (49%)
35,000 and above	7 (12%)
Comorbidities, <i>n</i> (%)	
Cardiovascular disease/stroke	4 (7%)
Hypertension	7 (11%)
Dyslipidemia	9 (15%)
Diabetes type 2	7 (11%)
Asthma	2 (3%)
Chronic obstructive pulmonary disease	4 (7%)
Body mass index, median [IQR]	27 [26, 29]
Current tobacco smoker, <i>n</i> (%)	4 (7%)
Duration of HIV infection in years, median [IQR]	15 [10, 21]
Years on ART, median [IQR]	12 [6, 21]
CD4 T cell count (cells/mm ³), median [IQR]	649 [418, 833]
CD4/CD8 ratio, median [IQR]	0.8 [0.5, 1.0]
Persons with detectable HIV viral loads not due to blips ^a	3 (5%) ^b
Median viral load when detectable (copies/mL) median (range) ^b	1,394 (range**: 1,296–9,425) ^b

- 61 PLWH had positive COVID-19 tests (57 during wave 2 and 4 during wave)
 - Period prevalence 4%
- Median CD4 count 649 cells/mm³ (IQR 418, 933)
- Median duration of HIV was 15 years (IQR 7,22)
- All individuals had been prescribed antiretroviral therapy but 3 had uncontrolled viremia
- Many individuals were male (6%)
- More than half of individuals were black (54%)
- Most common comorbidities were dyslipidemia, hypertension and diabetes (15%, 11%, 11%)
- Most individuals were Canadian citizens (43%) permanent residents (29%) or asylum seekers (25%)

TABLE 2. RISKS, SEVERITY, AND OUTCOMES
AMONG SARS-CoV-2 INFECTED PLWH
(SEPTEMBER 2020–AUGUST 2021)

	Wave 2 and 3 N = 61
COVID-19 risk factor, <i>n</i> (%)	
Family member/close contact	22 (36)
Lives in LTC home or residence	6 (10)
Works PSW/nurse/janitor in institution	6 (10)
Factory work	4 (6)
Working with the public (i.e., bus driver)	2 (2)
Hospitalization	3 (5)
Homeless/unstable housing	4 (6)
International travel	1 (2)
Unknown	13 (21)
Asymptomatic, <i>n</i> (%)	5 (8)
Symptomatic, <i>n</i> (%)	56 (92)
Fever	15 (25)
Cough	26 (43)
Sore throat	5 (8)
Shortness of breath	12 (20)
Sinusitis/rhinitis	4 (7)
Headache	9 (15)
Fatigue	7 (11)
Myalgias	13 (21)
Loss of taste/smell	11 (18)
Diarrhea	3 (5)
Severity on initial presentation, <i>n</i> (%)	
Mild (includes asymptomatic persons)	59 (97)
Moderate	2 (3)
Severe	0 (0)
Admitted to hospital with positive COVID-19 test, <i>n</i> (%)	2 (3)
Acquired COVID-19 in hospital but asymptomatic, <i>n</i> (%)	3 (7)
Full recovery, <i>n</i> (%)	57 (93)
Sequelae post COVID-19, <i>n</i> (%)	2 (3) ^a
Death due to COVID-19, <i>n</i> (%)	0 (0)
Death with a positive COVID-19 test but no COVID-19 symptoms, <i>n</i> (%)	2 (3)

- Most common exposure risk factor was having a family member/close contact with COVID-19 (36%), living in long-term care residence (10%) or working as a personal support worker, nurse or janitor in a health care institution (10%)
- Exposure risk unknown in 21%
- 5 individuals (8%) asymptomatic
- Nearly all individuals had mild disease on initial presentation
- Most had a full recovery
- Two individuals were admitted to hospital for reasons other than COVID-19
- Three individuals were admitted to hospital without and respiratory or infectious symptoms, but acquired COVID-19 nosocomially; 2 of these died due to reasons other than COVID-19
- Two individuals developed symptoms associated with long COVID syndrome (<6 months after COVID-19 infection)

Results Continued

Prevalence of COVID-19 at CVIS (waves 1, 2 and 3) was 5%, which was comparable with prevalence in general population in Montreal (7%); *Institut nationale de sante publique du Quebec*

Number of cases during wave 3 likely less than wave 2 due to vaccination rollout in Montreal as of January 2021

PLWH with COVID-19 during waves 2 and 3 similar to those during wave 1

CONCLUSIONS:

As in wave 1, a large proportion of PLWH with COVID-19 during waves 2 and 3 were of black ethnicity, low socioeconomic status, and worked in jobs that put them at high risk of COVID-19 exposure

Many of the PLWH had comorbidities which are known to be risk factors for COVID-19

Lack of severe disease may reflect the fact that few persons had CD4 counts <200 cells/mm³ and detectable viral loads

Study limitations:

-missed cases due to patients testing in community without staff knowledge

-findings may not be generalizable to other clinics, since CVIS is the referral centre for asylum seekers

-retrospective data collection may have led to reporting bias

Findings continue to underscore importance of social determinants of health as a risk factor for COVID-19 in PLWH

Upcoming work will examine impact of COVID-19 vaccination on the evolving COVID-19 risk profile

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