LETTER TO THE EDITOR

Four cases: Human immunodeficiency virus and novel coronavirus 2019 Co-infection in patients from Long Island, New York

To the Editor,

Originating from Wuhan, China, the novel coronavirus 2019 (severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2]) has been spreading worldwide since the end of 2019. There has been a reported case of human immunodeficiency virus (HIV) and SARS-CoV-2 coinfection in a man in Wuhan, China, but as of today there have been few reports of coinfection. This letter to the editor seeks to contribute four more cases to the literature.

1 | CASES

Presented here are four cases of coinfection of HIV and SARS-CoV-2 from Long Island, New York. Their main characteristics are summarized in Table 1.

### 1.1 | Patient A

A 56-years-old male started to feel fatigued as well as noted a decreased in his sense of taste and smell 3 days after returning to New York from a trip to Florida. At his local community physician he was given empiric antibiotics for a presumed sinus infection. Although he did not develop fever or respiratory symptoms he became concerned when his symptoms did not resolve after 9 days and he went to an urgent care clinic. Due to concerns for chemosensory dysfunction in SARS-CoV-2 infected patients real-time reverse-transcriptase polymerase chain reaction (RT-PCR) for the virus was done. SARS-CoV-2 RT-PCR resulted positive 3 days later. Two days after his positive test his symptoms of anosmia and ageusia resolved.

This man was diagnosed with HIV in 1995 with a recent CD4 T cell count of 1206 cells/µL and HIV-1 viral load 54 copies/mL.

### TABLE 1 Clinical characteristics and outcome of four HIV and COVID-19 coinfection

| Patient | Age/Sex | HIV Diagnosis date | CD4/ Viral Load | HIV medication Regimen | Comorbid conditions | Presenting symptoms | Outcome |
|---------|---------|---------------------|-----------------|------------------------|---------------------|---------------------|---------|
| A       | 56/Male | 1995                | 1206/54         | Emtricitabine          | HLD                 | Fatigue             | Anosmia Aguesia Home isolation until recovery |
|         |         |                     |                 | Tenofovir AF           |                     |                     |         |
|         |         |                     |                 | Dolutegravir           |                     |                     |         |
|         |         |                     |                 | Maraviroc             |                     |                     |         |
| B       | 56/Male | 1988                | 794/<20         | Emtricitabine          | HTN                 | Fever               | Fatigue Home isolation until recovery |
|         |         |                     |                 | Tenofovir AF           |                     |                     |         |
|         |         |                     |                 | Etravirine             |                     |                     |         |
|         |         |                     |                 | Abacavir              |                     |                     |         |
| C       | 62/Male | 1996                | 1412/<20        | Emtricitabine          | HCV                 | Fever               | Cough Home isolation until recovery |
|         |         |                     |                 | Tenofovir AF           |                     |                     |         |
|         |         |                     |                 | Dolutegravir           |                     |                     |         |
|         |         |                     |                 | Abacavir              |                     |                     |         |
| D       | 65/Male | 2006                | 929/<20         | Emtricitabine          | A. Fib              | Cough               | Fever Hospitalization for 2 wk |
|         |         |                     |                 | Tenofovir AF           |                     |                     |         |
|         |         |                     |                 | Elvitegravir           |                     |                     |         |
|         |         |                     |                 | Cobicistat            |                     |                     |         |
|         |         |                     |                 | T2DM                  |                     |                     |         |

Abbreviations: AF, alafenamide; A. Fib, atrial fibrillation; CD4 T, cell count measured in cells/µL; HCV, hepatitis C; HLD, hyperlipidemia; HTN, hypertension; T2DM, type II diabetes mellitus.
Detectable HIV viral load was attributed to viral blip. His HIV regimen consisted of emtricitabine, tenofovir alafenamide, dolutegravir and maraviroc. His only other comorbid condition is hyperlipidemia.

1.2 Patient B

A 56-years-old male who started to developed subjective fevers and fatigue. Nineteen days after the initial onset of fatigue he developed a temperature of 102°F (38.9°C) when he went to urgent care. He had no shortness of breath or cough. His chest X-ray was suggestive of pneumonia at which point he was given empiric antibiotics. SARS-CoV-2 RT-PCR resulted positive 2 days later. Three days after the positive test result he was asymptomatic.

This man was diagnosed with HIV in 1988 with a recent CD4 T cell count of 794 cells/µL and a HIV positive test result he was asymptomatic. His HIV regimen consisted of emtricitabine, tenofovir alafenamide, etravirine, and abacavir. His only other comorbid condition consisted of hypertension controlled with Lisinopril 10 mg daily.

1.3 Patient C

A 62-years-old male who had 2 week of non-productive cough and watery bowel movements. He decided to seek medical attention when he developed a temperature of 100.8°F (38.2°C). At his local emergency room his temperature was 100, blood pressure was 113/65, heart rate was 75, breathing was non-labored and his oxygen saturation was 97% on room air.

White blood cell count was 5200 cell/mL, blood urea nitrogen was 19 mL/dL, and creatinine was 1.06 mg/dL. Chest X-ray did not show any consolidation. He was discharged home with instructions to self-isolate. After discharge his SARS-CoV-2 RT-PCR resulted positive. One week after discharge he no longer has any symptoms.

This man was diagnosed with HIV in 1996 with a recent CD4 T cell count of 794 cells/µL and a HIV-1 viral load that was undetectable. His HIV regimen consisted of emtricitabine, tenofovir alafenamide, etravirine, and abacavir. His only other comorbid condition consisted of hypertension controlled with Lisinopril 10 mg daily.

1.4 Patient D

A 65-years old man presented to urgent care with cough and subjective fever. He was empirically started on oseltamivir 75 mg twice a day for 5 days. Two days later a test done for influenza A returned positive (Influenza A and B RNA, qualitative Real-time PCR, Quest diagnostics). One week after the onset of symptoms, he had completed his course of oseltamivir, however his symptoms did not improve. He went to the emergency room, temperature was 102.9°F (39.4°C), pulse 83, oxygen saturation 93% on two liters nasal cannula, blood pressure was 136/71. He was awake, alert and not showing signs of respiratory distress. White blood cell count was 5000 cells/mL, blood urea nitrogen was 11 mg/dL, and creatinine was 0.8 mg/dL. Chest X-ray did not show any consolidation.

He was admitted to the hospital and started on levofloxacin 500 mg IV daily was given for empiric coverage of pneumonia. Two days after admission SARS-CoV-2 RT-PCR returned positive. He had persistent episodes of desaturation going to low 80% on pulse oximetry and required supplemental oxygen via nasal cannula. Over the course of 2 weeks his oxygen saturation improved and he was discharged.

This man was diagnosed in 2006 with a recent CD4 T cell count of 929 cells/µL and a HIV-1 viral load that was undetectable. His HIV regimen consisted of emtricitabine, tenofovir alafenamide, elvitegravir and cobicistat. His comorbid condition consist of hypertension on losartan, type 2 diabetes mellitus on metformin, hyperlipidemia on atorvastatin and atrial fibrillation previously on Coumadin.

2 CONCLUSION

In conclusion, these four cases represent some of the first cases of HIV and SARS-CoV-2 coinfection in Long Island, New York. These HIV infected patients were compliant with their HIV medication regimen and had robust CD4 T cell counts. The case that was hospitalized recently had an influenza A infection. These cases suggest that uncomplicated cases of SARS-CoV-2 in an HIV infected patient can be managed with self-isolation at home.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

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