

# Evaluation of HIV/SARS-COV-2 Co-infected Patient and His Family Members who had COVID-19 Infection

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## ABSTRACT

An epidemic of Coronavirus Disease 2019 (COVID-19) began in December 2019 in China and the number of cases has increased rapidly, but relationship between comorbidity and cases of COVID-19 is still unknown. The risk of COVID-19 among people living with HIV (PLWH) is unknown too. We report HIV/SARS-COV-2 CO-infected patient and his two family members who had COVID-19 infection with same contact. We demonstrated that HIV/SARS-COV-2 co-infected case had mild clinical symptoms compared to his other family members.

**Keywords:** HIV; SARS-CoV-2; Co-infection; Coronavirus; Pandemic

## INTRODUCTION

Coronavirus Disease 2019 (COVID-19) is a viral respiratory disease caused by the 2019 novel coronavirus (2019-nCoV), which has caused the pneumonia epidemic in the world [1]. On 30 August 2021, there have been 216,229,741 SARS-CoV-2 infections worldwide, including 4,496,681 deaths. 2 The risk of COVID-19 among people living with HIV (PLWH) is unknown and data on PLWH in the current SARS-COV-2 pandemic are still limited.

We report HIV/SARS-COV-2 co-infected patient and his two family members who had COVID-19 infection with same contact. The impression is that HIV/SARS-COV-2 co-infected case had mild clinical symptoms comparison with his other family members.

## CASE PRESENTATION

### Case 1

A 55-year-old male with a medical history of Human Immunodeficiency Virus (HIV) presented to the emergency department complaining of unresolved symptoms of weakness, chill and myalgia for two-days. He had contact with his brother who died due to COVID-19. In addition, two members of the family who attended the funeral were hospitalized due to COVID-19 too. Family members were HIV negative but their clinical symptoms were severe, according to him.

He was under an antiretroviral regimen for five years and followed up regularly for HIVRNA negative. He has used TAF/FTC+elvitegravir/cobicistat (EVG/c) as ART regimen for last two years. There was no pathological finding in the physical

examination of the patient and oxygen saturation was found to be 98% in ambient air. Vital signs evaluated on admission revealed blood pressure of 140/70 mm Hg, pulse of 74 beats per minute, body temperature of 36°C (Figure 1).

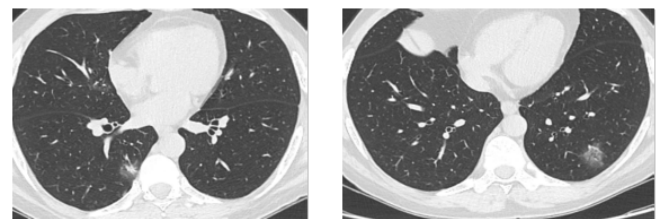


Figure 1: Chest CT imaging of patient 1.

All the laboratory results were within normal ranges and his CD4 cell count was 532 hucre/ $\mu$ l and chest X-ray were done on admission showed clear lungs and no significant abnormalities. Chest Computerized Tomography (CT) showed ground-glass attenuation areas in the right lower lobe superior and posterior basal segments, and in the left lower lobe lateral basal and upper lobe posterior segments. The affected parenchyma area is <25%. Reverse-Transcription Polymerase Chain Reaction (RT-PCR) result was positive for SARS COV-2 infection. Influenza A/B antigen panel was negative.

The patient was treated with hydroxychloroquine and azithromycin

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for five days. During the period of hospitalization, the patient also received his antiretroviral therapy at the previous dose. During the treatment, he had no fever and additional clinical signs.

On the 5<sup>th</sup> and 7<sup>th</sup> days, the control two SARS-CoV-2 RT-PCR tests were negative. He was discharged with droplet and contact isolation recommendations at home for a minimum of 14 days.

## Case 2

A 77-year-old female with a medical history of diabetes mellitus and hypertension was admitted to the emergency department with a dry cough, headache and persistent fever for two days. She had contact with her son who had died due to COVID-19. On admission, laboratory test results were within normal ranges, except leukopenia (3000/mm<sup>3</sup>), lymphopenia (500/mm<sup>3</sup>) and 12-fold CRP elevation. Chest Computerized Tomography (CT) showed sub pleural patchy ground glass infiltrations in all lobes of bilateral lung.

Hydroxychloroquine, doxycycline treatment was started. RT-PCR result was positive for SARS-CoV-2. On the 4<sup>th</sup> days, favipiravir was started for five days and she also was given IL-1 receptor antagonist (Anakinra) for three days because she had leukopenia (2600/mm<sup>3</sup>), 18-fold CRP elevation, low oxygen saturation (SpO<sub>2</sub> 82%).

She was discharged with a long term oxygen therapy *via* an oxygen concentrator on the recommendation of the chest diseases department. She was hospitalized for 19 days (Figure 2).

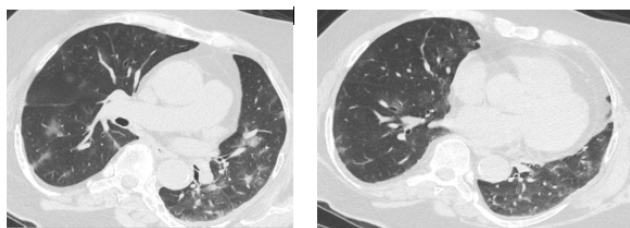


Figure 2: Chest CT imaging of patient 2.

## Case 3

A 57-year-old female with a medical history of asthma admitted to the emergency department with a dry cough, diarrhea, dyspnea and persistent fever for two days. She had contact with her brother who died due to COVID-19 (Figure 3).

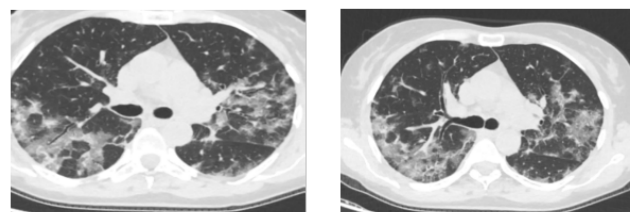


Figure 3: Chest CT imaging of patient 3.

On admission, laboratory test results were within normal ranges, except leukopenia (3400/mm<sup>3</sup>), lymphopenia (970/mm<sup>3</sup>), thrombocytopenia (71000/mm<sup>3</sup>), ferritin 339 µg/L and 3-fold CRP elevation. Chest CT showed peripherally focal ground glass

infiltrations in all lobes of bilateral lung.

RT-PCR result was positive for SARS-CoV-2. The patient was treated with hydroxychloroquine and azithromycin for five days. On the 4<sup>th</sup> day of treatment, she had 10-fold CRP elevation, low oxygen saturation (SpO<sub>2</sub> 88%), high IL-6 (163 pg/mL). Favipiravir and IL-1 receptor antagonist (Anakinra) treatment was given. After two negative SARS-CoV-2 RT-PCR test results, she was discharged. She hospitalized for 15 days.

## RESULTS AND DISCUSSION

COVID-19 outbreak expands to cover a large area in the world. Infection with COVID-19 is associated with significant morbidity especially in patients with chronic medical conditions [2,3]. But the risk of COVID-19 among people living with HIV (PLWH) is unknown. In fact, despite there are many HIV-infected patient. There have been few reported cases in the literature of PLHIV with COVID-19 infection. A study of 5700 patients hospitalized with COVID-19 in the New York City, found only 0.8% involved people living with HIV PLHIV). 4 We followed only one case of PLHIV with COVID-19 infection (1/600, 0.16%) at our hospital, which is an epicenter not only of CoV-2 infection but of HIV as well.

PLWH taking Antiretroviral Therapy (ART) may be at decreased risk for COVID-19 because HIV antiretroviral medications may have activity against coronaviruses such as SARS-CoV-2. On the other hand, there might be a lower risk than general population [4,5]. We observed that the PLHIV case who takes ART had the mildest clinic among other family members who were COVID-19 infected from the same contact. Also PLHIV case had a little ground glass at Chest CT.

On the other hands, the symptoms of our HIV-infected case may be mild due to him having any comorbidity. As noted by Ozlem Altuntas Aydin et al., presence of comorbidities is an important factor for mortality in HIV/SARS-CoV-2 infected cases [6,7].

## CONCLUSION

We demonstrated that HIV/SARS-CoV-2 co-infected case had mild clinical symptoms as compared to his other family members. Information about incidence, clinical characteristics, and outcomes of HIV-infected cases with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections is not available. More research is needed to understand the risks of COVID-19 among PLWH and the impact of ART on outcomes of patients with COVID-19.

## DECLARATION OF CONFLICTING INTERESTS

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## REFERENCES

1. Huang C, Wang Y, Li X. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet* 2020;395:497-506.
2. Bagnoli VR, Fonseca AM, Cezarino PYA, Fassolas G, Arie JAVR, Baract EC. Evidence-based hormonal acne treatment. *Revista Femina*. 2010.
3. WHO Coronavirus Disease (COVID-19) Dashboard. 2021
4. Rodriguez-Morales AJ, Gutiérrez-Ocampo E, Cardona-Ospina JA. Clinical, laboratory and imaging features of COVID-19: A systematic review and meta-analysis. *Travel Medi Infect Dis* 2020; 34:101623.

5. Richardson S, Hirsch JS, Narasimhan M Presenting characteristics, comorbidities, and outcomes among 5700 patients hospitalized with COVID-19 in the New York City area. JAMA 2020;323(20):2052-2059..
6. Joob B, Wiwanitkit V. SARS-CoV-2 and HIV. J Med Virol 2020;92(9):1415.
7. Altuntas Aydin O, Kumbasar Karaosmanoglu H, Kart Yasar K. HIV/SARS-CoV-2 co-infected patients in Istanbul, Turkey. J Med Virol 2020;92(11):2288-2290.