

COVID-19 in HIV Infection Patient with Wasting Syndrome and Pneumocystis Carinii Pneumonia

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Abstract: COVID-19 was declared as a worldwide epidemic disease. was first reported in Wuhan, Hubei Province, China, in December 2019. Human Immunodeficiency Virus (HIV) can suppress immune function and it is not known how this might affect Covid-19 co-infected patients. We present here a case of Covid-19 patient with human deficiency virus (HIV) and the management.

Keywords: coronavirus disease, Covid-19, HIV, CD4, pneumocystis carinii pneumonia

1. Introduction

The 2019 coronavirus disease (Covid-19) was declared a public health emergency of international concern by the World Health Organization (WHO) at the end of January 2020.[1] This disease was first reported in Wuhan, Hubei Province, China, in December 2019. In the following weeks, the viral infection spread throughout China and other countries around it. [2,3] Covid-19 is a respiratory disease that spreads rapidly from one person to another through respiratory droplets produced when coughing and sneezing. It is considered most contagious when people are symptomatic, although transmission may be possible before symptoms appear in a patient.[4]

People living with Human Immunodeficiency Virus (HIV) infection often have suppressed immune function and it is unknown how this might affect patients with Covid-19 coinfection. A study showed about 490 patients coinfecting with HIV with Covid-19, of whom 287 were hospitalized and 50 died.[5] Here we present a case of a Covid-19 patient with HIV.

2. Case report

A 30 year old male patient had coughing and shortness of breath since 1 month ago. He also lost about 13 kg in 2 months, accompanied by fever and diarrhea. The patient is a smoker. The patient's history of other illnesses was denied and there was no drug or food allergy. The patient admitted that he had no history of contact with a patient infected with Covid-19 and did not attend other events and was not in a crowded situation.

Patient awareness is good, looked weak, with vital signs blood pressure 110/70 mmHg, heart rate 80/min, temperature 37, 8°C, and respiratory rate 20/min. On examination, he looked pale accompanied by wheezing in the left lung, also increased abdominal peristalsis. Laboratory tests performed after admission showed Hb 12.9 g/dL, hematocrit (38.7%), lymphocytes (0.75x10³/uL), and Neutrophil Lymphocytes ratio 5.83. CD4 absolute 51 cell/uL, CD4 7.2%, CD8 51.71%, CD4:CD8 ratio 0.14.

Positive Covid-19 PCR swab. Chest X-ray shows pneumonia. The patient was diagnosed with Covid-19 with HIV.

Patients were given 4lpm of oxygen with nasal cannula, Levofloxacin inj. 750mg once a day, Dexamethasone inj. 5mg every 8 hours, Vitamin C 600mg PO every 12h, Paracetamol 500mg PO every 8h, Atalpulgit 1 tab every diarrhea, Omeprazole 40mg once a day, Avigan first day 1600 mg every 12h, reduced the dose of Avigan on day 2 600mg every 12h.

3. Discussion

Nowadays, Covid-19 has become a worldwide epidemic disease and challenges the global health care system. The estimated incubation period for this disease is 14 days, with most people showing symptoms 4–5 days post exposure. Several studies have found asymptomatic people who still carry the virus after 14 days of isolation.[6] Symptomatic COVID-19 patients generally present with fever, cough, malaise, and shortness of breath. Other common symptoms reported are headache, sore throat, rhinorrhea, and diarrhea. If symptoms are mild, they are usually treated at home with supportive care.[7] As in this case the patient showed symptoms of cough, shortness of breath and diarrhea with the confirmation that the covid-19 PCR swab was also positive. Reverse transcriptase polymerase chain reaction (RT-PCR) is the gold standard for testing Covid-19 which is routinely used to confirm a diagnosis, due to its high sensitivity test.[8]

In this case the patient was coinfecting with HIV and Covid-19, with the patient's CD4 count of 51 cells/uL (low value). CD4 count indicates a weak immune system, these people may still be more susceptible to viral infection or later bacterial pneumonia than the general population.[6] Symptoms of cough, shortness of breath, diarrhea accompanied by weight loss >10% are also part of HIV symptoms, which lead to pneumocystis carinii pneumonia and wasting syndrome.[9,10]

Management of the COVID-19 case includes standard management consisting of supportive management including

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pharmacological and non-pharmacological as well as administration of antiviral. The non pharmacology given was oxygen in this case. Providing supportive pharmacology such as symptomatic therapy, corticosteroids and vitamin C supplements is very important to overcome existing symptoms that increase the immune system.[11] Patients with levofloxacin indicated symptoms of pneumonia such as fever, cough and shortness of breath[12,13], similar to this case .

Avigan (antiviral) is a pro-drug. The action of this drug is by undergoing intracellular ribosylation and phosphorylation into the active form of favipiravir ribofuranosyl-5'-triphosphate (favipiravir-RTP). The Favipiravir-RTP content binds to and inhibits the viral RdRp, resulting in inhibition of transcription and replication of the viral genome. The catalytic domains of RdRp are similar among RNA viruses, contributing to the broad-spectrum activity of favipiravir as an anti-RNA virus.[14,15] Antivirals here have two functions at once, apart from treating Covid-19, this drug is also used for HIV in this case because they are both caused by a virus.

4. Conclusion

Covid-19 and HIV have almost the same symptoms. Both of these diseases require supportive treatment with pharmacological and non-pharmacological therapies that are tailored to the clinical conditions.

References

- [1] Özdemir O. Coronavirus Disease 2019 (COVID-19): Diagnosis and Management. *Erciyes Med J.* 2020;42(3):242-43.
- [2] Ouassou H, Kharchoufa L, Bouhrim M, et al. The Pathogenesis of Coronavirus Disease 2019 (COVID-19): Evaluation and Prevention. *Journal of Immunology Research.* 2020;pp.1-2.
- [3] Zu ZY, Jiang MD, Xu PP, et al. Coronavirus Disease 2019 (COVID-19): A Perspective from China. *Radiology.* 2020;296:E15-16.
- [4] Hafeez A, Ahmad S, Siddqui SA, et al. A Review of COVID-19 (Coronavirus Disease-2019) Diagnosis, Treatments and Prevention. *EJMO.* 2020;4(2):116-17.
- [5] Lowenthal ED, Matshaba M. COVID-19 in people with HIV. *The Lancet.* 2020;7:524-25.
- [6] Menghua W, Xin Z, Jianwei L, et al. Case report: one case of coronavirus disease 2019 (COVID-19) in a patient co-infected by HIV with a normal CD+T cell count. *AIDS Res Ther.* 2020;17(46):1-3.
- [7] Foster A, Khan Z, Siddqui A, et al. It's complicated: A case report on a COVID-19-positive HIV patient presenting with rhabdomyolysis and acute kidney injury. *SAGE Open Medical Case Reports.* 2020;8:1-6.
- [8] Drame M, Teguo MT, Proye E, et al. Should RT-PCR be considered a gold standard in the diagnosis of COVID-19? *Journal of Medical Virology.* 2020;9(11):1-5.
- [9] Carmona EV, Limper AH. Update on the diagnosis and treatment of Pneumocystis pneumonia. *Therapeutic Advances in Respiratory Disease.* 2011;5(1):41-59.

- [10] Dwivedi R, Pandey V. Wasting Syndrome and Quality of Life in HIV/AIDS. *Austin J HIV/AIDS Res.* 2018;5(2):1-5.
- [11] Bajwah S, Wilcock A, Towers R, et al. Managing the supportive care needs of those affected by COVID-19. *Eur Respir J.* 2020;5:1-6.
- [12] Metlay JP, Waterer GW, Long AC, et al. Diagnosis and Treatment of Adults with Community-acquired Pneumonia. *Am J Respir Crit Care Med.* 2019;200(7):45-60.
- [13] Kalil AC, Metersky ML, Klompas M, et al. Management of Adults With Hospital-acquired and Ventilator-associated Pneumonia: 2016 Clinical Practice Guidelines by the Infectious Diseases Society of America and the American Thoracic Society. *CID.* 2016;63:61-5.
- [14] Instiaty, Sri Darmayani IGAAP, Marzuki JE, et al. Antiviral treatment of COVID-19: a clinical pharmacology narrative review. *Med J Indones.* 2020;29:340-41.
- [15] World Health Organization. Clinical Management of COVID-19. 2020.