PNEUMOCYSTIS JIROVECII PNEUMONIA IN A HIV-NEGATIVE ADULT IN COVID-19 PANDEMIC

Muhammad Mohsin Sajjad, Sidra Yousaf

Royal College of Physicians, Ireland

ABSTRACT

A 67 years old gentleman presented with shortness of breath, fever and cough. Baseline imaging and routine bloods were consistent with respiratory tract infection. He was treated on the lines of COVID-19 infection, but he was clinically and radiologically deteriorating and was eventually intubated. Upon clinical suspicion and repeated COVID-19 negative swabs, treatment for pneumocystis jirovecii was initiated and there was an excellent clinical improvement. The patient was extubated and was subsequently weaned off oxygen, HIV was negative, sputum and PCR showed pneumocystis jirovecii pneumonia.

Keywords: COVID-19, Pneumocystis Jirovecii Pneumonia

INTRODUCTION

Pneumocystis carinii pneumonia (PCP) is an opportunistic infection and it usually infects immunocompromised individuals, or patients with advanced stage of HIV infection. Clinical symptoms include nonproductive or dry cough, fever and shortness of breath[1]. Pneumocystis jirovecii usually causes pneumonia in immuno-compromised individuals and is considered an AIDS defining illness, due to wide spread use of HAART, this infection has dramatically decreased in HIV positive individuals. On the other hand, PCP infection is growing among HIV non infected individuals due to increasing use of immunosuppressive agents, corticosteroids for various underlying medical conditions[2,3]. Pneumocystis carnii infection is a widely prevalent opportunistic infection in acquired Immune Deficiency Syndrome[4]. Studies show that Pneumocystis jiroveci not only infect individuals who are immunocompromised but also colonize mammals with normal immune systems[4].

CASE REPORT

A 67 years old gentleman presented with cough, shortness of breath and fever. The background history was significant for diabetes and hypertension. Baseline imaging and routine bloods were consistent with respiratory tract infection. The patient was clinically deteriorating,

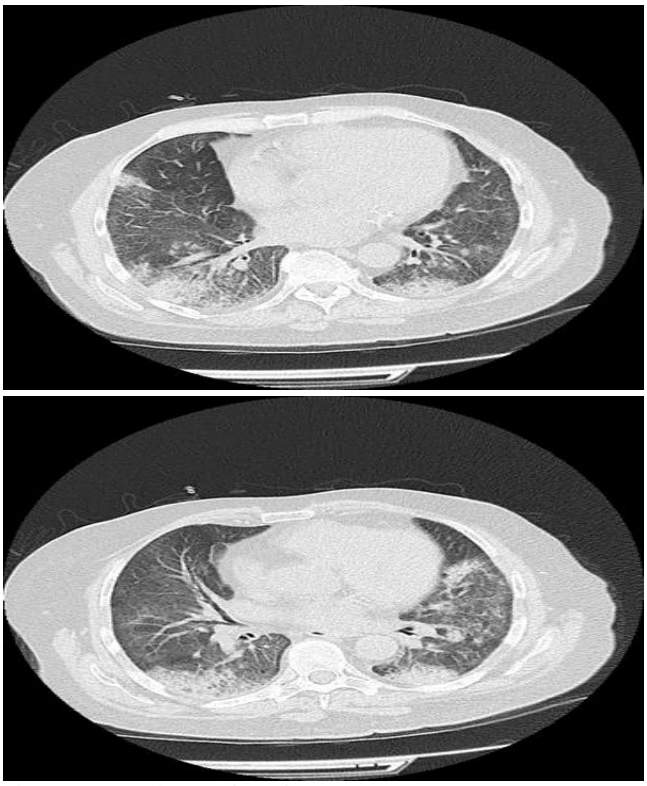

Figure: CT Chest of patient.

inflammatory markers were on the upward trend, blood gas showed type 1 respiratory failure and the patient was admitted to the intensive care unit and owing to severe hypoxemia, the

Correspondence: Dr Muhammad Mohsin Sajjad, Department of Medicine, Cavan General Hospital, Ireland
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patient was intubated and subjected to mechanical ventilation. Treatment with broad spectrum IV antibiotics was initiated, but there was no clinical or radiological improvement. a CT Chest showed Bilateral middle lower lung patchy opacities/consolidations and interstitial pneumonia (figure). On clinical suspicion and repeated covid negative swabs, negative blood and urine cultures, PCP treatment was initiated. There was an excellent clinical improvement. The patient was extubated and was subsequently weaned off oxygen, HIV was negative, sputum and PCR showed PCP.

DISCUSSION

The clinical presentation of our patient was very similar to COVID-19 infection and initially he was treated on the line of covid19, as majority of presentation to the hospital in this pandemic are with COVID-19. There were no risk factors like immunosuppression, history of transplant or steroid use. The only significant past medical history of note was diabetes. Studies show that diabetes has been associated with increased susceptibility to infection,high level of blood glucose, highosmolality reduces phagocytic and bactericidal activity[5,6]. Recent studies show that the ratio of HIV negative patients versus HIV patients presenting with pneumocystis infectionhas increased dramatically from 1.7 to 5.6[7]. One of study shows longerduration of symptomsin HIV patients compared to non-HIV patients[8]. The clinical history in our case was insidious which is correlating with the above findings. Radiologic findings range from bilateral ground glass opacities (GGO) with peripheral sparing 43% to bilateral pneumonia[8]. The recommended treatment for HIV negative patients is trimethoprim-sulfamethoxazole (TMP-SMX)[9]. If appropriate antibiotic therapy is not initiated, the mortality rate from PCP in HIV-uninfected individuals` approaches 90 to 100 percent[10].

CONCLUSION

PCP can be a diagnostic challenge specially in this COVID-19 pandemic. The clinical presentation can mimic a COVID-19 infection. It is even more challenging when there are no risk factors for PCP infection like immunosuppression or HIV infection.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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