



Respiratory Medicine

PNEUMOCYSTIS JIROVECHII PNEUMONIA (PCP) IN A NEWLY DIAGNOSED HIV PATIENT

Dr. Dhayalnithi. K	Post Graduate, Respiratory Medicine Department, Sree Balaji Medical College.
Dr Ghanshyam Verma	Head Of Respiratory Medicine Department, Sree Balaji Medical College.
Dr. Ragavi Elango	Post Graduate, Respiratory Medicine Department, Sree Balaji Medical College.
Dr. Selva Nandha Kumaran	Post Graduate, Respiratory Medicine Department, Sree Balaji Medical College.

ABSTRACT Pneumonitis is opportunistic yeast like fungus more confined to lung parenchyma. PCP is one of the major life threatening opportunistic infection predominantly infecting respiratory system, particularly in HIV positive patients. Pneumocystis jirovecii is classified as a fungus (1). The coexistence of PCP in HIV patient shares clinical features of breathlessness, fever, fatigue, weight loss and diffuse lymphadenopathy needs high degree of clinical suspicion. Therefore, we report a case of 27yr old young male diagnosed with HIV presented with Pneumocystis jirovecii pneumonia. Early diagnosis and management of this condition improve the prognosis and life time of the patient.

KEYWORDS :

INTRODUCTION

The incidence of AIDS is remarkably getting increased since 1980s. PCP is the main AIDS defining illness at 1980s era (2). Route of transmission is airborne route. In acute phase of Human Immunodeficiency Virus infection, CD4+ T cell count drastically decreases (1). The current case highlights the opportunistic infection of the Pneumocystis jirovecii pneumonia in young male who is newly diagnosed with HIV infection. Delayed diagnosis and intervention can cause increased morbidity and mortality rate.

History

27yrs old male patient came with 30 days history of dry cough and breathlessness on and off. Patient also had a history of fever for past 15 days, on and off and history of chest pain and palpitation for past 1 week. He described a 4 month history of weight loss 5kg with and loss of appetite. He did not have any other specific history. He is working in an IT company worker. He is a non-smoker and non-alcoholic. No history of any IV drug abuse. He is unmarried. No history of sexual contact. He didn't report any blood transfusion history.

Recently patient had a tattoo history in his right hand. No trauma history. No other comorbid condition. Clinical examination revealed that the patient was conscious, oriented, febrile, tachypnea and dyspnea at rest. He was non (anemic, icteric, cyanotic and clubbing). No other generalized lymphadenopathy. PR - 102/ BPM, RR - 30 breaths per minute with SPO2 85% @ RA. BP:130/80 mmHg, temperature of 99 degree F. CBG - 88 mg/ dl, BMI - 22Kg/m.GCS:15/15. RS -B/L NVBS, CVS -S1S2 present and no added sounds, Abdomen soft and non-tender, CNS-NFND. ECG showed normal sinus rhythm with sinus tachycardia.

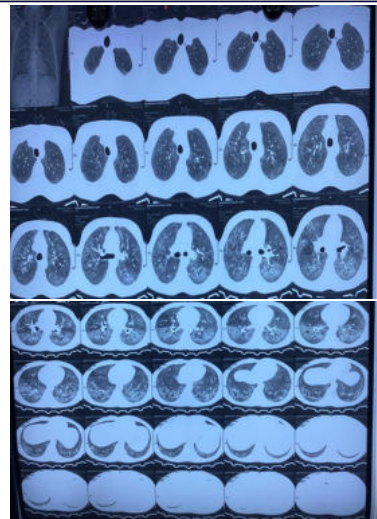
Blood Investigation

All base line investigation were done and are as follows

CBC: Normal
Hb:11.5 g/dl
ESR: 79 mm
LFT:Normal
RFT:Normal
Urine routine:normal
HIV (ELISA):Positive
HbSag - Negative
HCV - Negative.
Sputum AFB and culture and sensitivity - negative
Sputum CBNAAT - Negative
CD4 Count - 52

Radiological Investigation

Ct Chest: diffuse nodular opacity, Ground glass opacities
USG Abdomen and pelvis: Hepato Splenomegaly



Diagnosis

The symptoms of PCP are nonspecific and include breathlessness, non-productive cough and low-grade fever. Some patients can even be asymptomatic. Physical examination results are nonspecific as well. However, crackles are a typical finding on auscultation. Chest X-rays of patients infected with PCP usually show diffuse bilateral interstitial infiltrates. Some patients have lobar consolidations and nodules in chest x ray. Very mild PCP chest X-ray even appear to be normal (2). CT Chest will show diffuse ground-glass opacities (GGO). Presence of the Pneumocystis jirovecii organism in induced sputum, broncho-alveolar lavage (BAL), or lung tissue, by staining with Gomori methenamine silver (GMS) stain is considered diagnostic for PCP(3). The diagnostic yield of GMS staining on BAL for PCP in an HIV-infected patient is over 92%, and lung biopsy for diagnosing PCP is reserved only for patients with negative BAL staining but with high clinical suspicion for PCP(4). There are also molecular techniques such as real-time Polymerase Chain Reaction for the detection of the organism.

Treatment

Patient clinically presented with signs and symptoms of pneumonia and was initially treated in non-invasive ventilation support in view of hypoxemia and persistence desaturation and was initially started with IV antibiotics. After the viral markers report, ANTI RETROVIRAL THERAPY immediately started to the patient (ART-TLD regimen). PCP Prophylaxis also started to the patient Sulfamethoxazole and trimethoprim 480mg 2tablets twice a day. Patient symptomatically improved. ATT prophylaxis was also started.

DISCUSSION

Pneumocystis jirovecii is an opportunistic pathogen that produces a clinical syndrome ranging from asymptomatic infection to sub-acute and acute interstitial pneumonia in susceptible host while the symptoms of PCP came to worldwide prominence during HIV/AIDS Epidemic in 1980s. The incidence of PCP is currently highest in HIV positive immune compromised patients owing to improvements in HIV treatments and increase in the number of HIV negative patient receiving immunosuppressive therapies. The treatment of choice in both HIV positive and HIV negative and immune compromised patients is sulfamethoxazole trimethoprim, which has proven to be highly effective regimen for prevention of PCP disease in vulnerable host. Impairment of cell-mediated immunity is the main important factor for the development of PCP (8). This relationship is proved by the co-occurrence of PCP in patients with AIDS and immune compromised patients. Other common high risk populations for developing PCP are organ transplant patients, cancer patients (hematologic malignancies in particular), and patients on chemotherapeutic agents and immunosuppressant drugs such as steroids, cytotoxic agents and anti-tumor necrosis factor drugs used for rheumatologic diseases. Hypoxia is the hallmark of the PCP but the clinical findings varies depending on the host immune status.(6)

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CONCLUSION

Several factors are associated with PCP infection in HIV - Infected patients. AIDS stage 4, age, CD4 counts, nutrition and viral load have been established as a high risk factor. Early diagnosis and intervention of *Pneumocystis jirovecii* pneumonia have been known to improve the quality and length of life of people living with HIV infection.

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