Another Opportunity for an Opportunistic Infection: A Case Report

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Introduction

Pneumocystis jiroveci pneumonia, or PJP, is a life-threatening condition caused by the atypical fungus P. jirovecii. Because PJP is one of the most common opportunistic infections among HIV-infected patients, this disease is typically associated with this population. However, it is often forgotten that this disease can also manifest in the immunocompromised, HIV-uninfected population.

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Case Description

75 y/o male with a history of prostate cancer, chronic PE/DVT (anticoagulated with enoxaparin), splenic marginal zone lymphoma (with weekly rituximab therapy), and ITP who initially presented to the hospital with shortness of breath. Four weeks prior, the patient was started on a prolonged prednisone taper of 60mg down to 10mg daily in less than a month for recurrent ITP. Upon arrival to the ED, the patient was hypoxic on room air and was started on supplemental oxygen. CT chest was consistent with an acute on chronic pulmonary embolism (PE) and a peripheral opacity in the right lower lobe with central cavitation. He was continued on his home enoxaparin and started on empiric antibiotics for suspected healthcare associated pneumonia (HCAP). Pulmonary was consulted and suspected that the patient's cavitation was secondary to a pulmonary infarction. However, the patient continued to be hypoxic despite antibiotics and anticoagulation. Serum LDH drawn four days into his admission was elevated. He underwent a bronchoscopy with bronchoalveolar lavage that was ultimately positive for Pneumocystis jiroveci. He was subsequently started on a 21-day course of sulfamethoxazole/trimethoprim and resumed on his home prednisone taper with improvement.

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Indications for PJP Prophylaxis

Table 5 Recommendations for *Pneumocystis jirovecii* prophylaxis

Infection risk	Disease/therapy	Level of evidence
Strong evidence for increased risk[a] - ALL - Prolonged CD4 <200/µl - Long-term steroids[b]	TMP/SMX for the duration of therapy or until CD4 > 200/µl	A-I
Risk status not entirely conclusive - R-CHOP; BEACOPPesc - Prolonged neutropenia - Acute myeloid leukemia - High dose cytarabine	TMP/SMX for the duration of therapy	C-III
Consider PCP prophylaxis when recommended by the manufacturer (for example temozolamide and radiation)		

[a]Increased risk: if incidence greater than 3.5 % (NNT 15)

[b]Including patients without neutropenia, e.g., cerebral metastasis from solid tumor

Discussion

This is a case of PJP in a patient that had been on chronic steroids for recurrent ITP and undergoing weekly treatment for splenic marginal zone lymphoma. PJP is a disease that often presents with fever, cough, and respiratory failure in the immunocompromised population. Unlike other pneumonias, this microbe does not respond to typical broad-spectrum coverage and requires prolonged treatment with sulfamethoxazole/trimethoprim, atovaquone, and possibly steroids. PJP has historically been associated with the HIV-infected population and is one of the most common opportunistic infections in patients with a CD4 count less than 200. However, other immunocompromised individuals are also at risk of acquiring this potentially fatal infection. Interestingly, this patient was on less than the normal 20mg daily prednisone for over a month to consider needing PJP prophylaxis treatment. There are no specific recommendations regarding concurrent use of rituximab, but this patient suggests that PJP prophylaxis should be considered in individuals on lower doses of prednisone while on rituximab. This patient was fortunate to have been diagnosed and adequately treated for this disease after minimal improvement with broad spectrum antibiotics. Furthermore, it is important to consider PJP in all immunocompromised patients despite their HIV status.

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References

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