Disseminated Histoplasmosis in an Immunocompetent Patient

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Introduction

Histoplasma capsulatum is an endemic dimorphic fungus of the Mississippi and Ohio River valleys that contaminates the soil via spores spread in bird or bat guano or chicken feces. Infection in patients with intact cellular immunity usually results in asymptomatic or mild, self-limited disease, while the progressive, disseminated disease occurs more frequently in patients with deficient host immunity.

Case report

A 41 year old African American man presented initially to the Emergency Department with complaints of cough and fever for a few days. CXR showed a lobar infiltrate and the patient was started on doxycycline and sent home. The patient continued to have worsening cough, fever, night sweats, loose bowel movements, nausea, and intractable vomiting which prompted his return to the Emergency Department.

Physical exam revealed decreased breath sounds with crackles at the right lower lobe. Initial laboratory data showed leukocytosis with a left shift, anemia, and thrombocytosis. Mild hyponatremia with sodium of 131 mmol/L, anion gap of 16, lactic acid of 6, and an albumin of 1.8 was also noted.

Patient was started on broad spectrum antibiotics and cultures were drawn. Patient continued to deteriorate with multiple organ failure. Chest x-ray showed airspace consolidation in right middle lobe, and ill-defined opacities in the right upper and lower lobes. Work-up for HIV, hepatitis, collagen vascular diseases, syphilis, and tuberculosis was negative. Patient had a ferritin level greater than 3000 ng/ml. A urine histoplasma antigen result was positive and a bronchoalveolar lavage culture grew Histoplasma capsulatum, however, bone marrow biopsy was negative.

Based on the presence of a positive urine Histoplasma antigen, positive bronchoscopy culture results, transaminoids, and profound anemia, the patient was started on Itraconazole for disseminated Histoplasmosis.

The patient quickly improved and was discharged home with Infectious Disease follow-up.

Discussion

Histoplasmosis is caused by infection with Histoplasma capsulatum, the endemic dimorphic fungus of the Mississippi and Ohio River valleys that contaminates the soil via spores spread in bird, bat guano, or chicken feces. Inhalation of these particles leads to a wide spectrum of illness, based both on the intensity of exposure and the status of the host immune system. Within the first few weeks, infection results in hematogenous spread through macrophages of the reticular-endothelial system. Infection in patients with intact cellular immunity usually results in asymptomatic or mild, self-limited disease, while the progressive, disseminated form is reserved for patients with deficient host immunity.

Disseminated infection is defined as illness not improved after 3 weeks associated with evidence of extrapolmonary involvement including hepatosplenomegaly, skin lesions, mucosal ulcers, GI involvement, pancytopenia, progressive elevation of hepatic enzymes, marked increase in lactate dehydrogenase, or marked increase in ferritin. Risk factors for development of disseminated disease include AIDS, age (infants), hematological malignancies, solid organ transplant, use of TNF antagonists or corticosteroids, or congenital T cell defects. Disseminated histoplasmosis occurs in only 10% of clinically symptomatic cases.

Conclusions

Our patient clearly showed physical and laboratory evidence of extrapolmonary involvement in the face of a progressive pulmonary disease, hepatomegaly with transaminoids, significantly elevated ferritin, GI involvement with nausea, vomiting, diarrhea as well as profound anemia. Although, we did an extensive work-up to try to illicit a cause for disseminated histoplasmosis, none was evident from our work up. It maybe possible that he has some intrinsic immunological host defect, or more likely that he was exposed to extremely high bug inoculate. This case outlines the rare finding of disseminated histoplasmosis in an immunocompetent host.

References

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