

A HIV Patient With PCP And Cryptococcal Meningitis: Management Issues

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Citation

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Abstract

INTRODUCTION

There is only one published case report on HIV patient presenting with both PCP pneumonia and Cryptococcal meningitis (1). We diagnosed HIV with PCP pneumonia and Cryptococcal meningitis in a 25 year old male who was sexually active with multiple partners and presented with fever, cough, shortness of breath, headaches and vomiting. After diagnosing cryptococcal meningitis, we decided to treat the patient with IV Fluconazole (diflucan) for 2 weeks followed by Oral Fluconazole (diflucan) for 1 week. The reason we chose diflucan instead of IV Amphotericin was because the patient did not have severe symptoms and signs of meningitis such as severe headaches, photophobia, neck stiffness and also due to the more toxic effects and poor tolerability of IV Amphotericin. After three weeks of Diflucan therapy, the patient still had headaches, vomiting and the CSF cultures were growing *Cryptococcus neoformans*. Hence we decided to stop diflucan and started the patient on IV Amphotericin with careful monitoring of renal function and serum magnesium. Two weeks after initiating IV Amphotericin, the CSF cultures were negative for *Cryptococcus neoformans* on three successive occasions, a week apart and the patient became completely asymptomatic.

CASE REPORT

HISTORY: A 25 year old male originally from Guyana, settled down in United States for the past 5 years presented to our hospital on Oct 17, 2004 with fever, shortness of breath, headache and vomiting of one and a half month duration and cough of three months duration. The fever started 2 weeks after he went to Guyana which was on Aug 16, 2004. The fever was intermittent, high grade, more in the night, associated with rigors and night sweats. He had shortness of breath on and off for the past one and a half

months especially when he had severe cough. The shortness of breath was progressively worsening in nature, not related to exertion, aggravated by coughing and no relieving factors. Headaches started at the same time as fever, they were gradual in onset, progressively worsening in nature, generalized, band like in character, non-radiating, 10/10 in severity, present throughout the day, worse in the night, no aggravating factors and relieved by taking Tylenol. Vomiting started the same day as fever and headache, two to three episodes per day on an average, progressively worsening in nature, immediately after eating food, consisted of undigested food particles, non bilious, non bloody and non foul smelling. Cough started 3 months ago, was insidious in onset, progressively worsening in nature, productive of yellowish sputum, aggravated by lying down, no relieving factors, no diurnal variation; sputum is not mixed with blood and non foul smelling. He had loss of appetite since the beginning of fever, headaches and vomiting. He lost 40 lbs in the past six months. The patient denied history of chest pain, orthopnea, PND, pedal edema, dizziness, syncope, visual disturbances, ear problems, seizures, weakness, myalgias, difficulty swallowing, bladder and bowel disturbances. He denied history of contact with a patient with known tuberculosis, contact with sick persons and HIV testing in the past. He had a PPD testing five years ago which was negative. Past medical history was significant for generalized skin lesions of two years duration which was thought to be and treated as psoriasis. No previous hospitalizations or surgeries in the past. No known drug allergies and no other allergies. He was taking Tylenol for fever and headaches. He denied drug abuse, admits to drinking six cans of beer during the weekends for the past ten years and smoking one pack of cigarettes per week for the past eleven years. He is a construction worker by occupation, unmarried and living alone. He admits to having

unsafe sex with multiple sexual partners and his sexual partners were all females. Family history was significant for type II Diabetes mellitus.

PHYSICAL EXAM: On examination, the patient was conscious, toxic and in respiratory distress. His vitals on admission: Temperature-103.8 °F, BP-138/84 (No orthostatic changes), Pulse rate- 114 and regular, Respiratory rate-24, Pulse oximetry showed oxygen saturation of 88% at room air.

Examination of the oral cavity revealed thrush on the buccal mucosa. Examination of the skin showed generalized macular, well circumscribed hyperpigmented lesions ranging from 1-3 cms in diameter. Auscultation of the lungs revealed bilateral basal crackles. Cervical and Inguinal lymph nodes were palpable, non tender, soft and freely mobile Examination of the fundus, ear, nose, throat, heart, abdomen, genitalia, rectum, peripheral pulse and extremities were normal. The patient was alert and oriented. Cranial nerves, motor, sensory, coordination and gait were all intact. Reflexes were 2+ bilaterally and symmetrical. Plantar was flexor and meningeal signs were negative.

Figure 1

CHEST X-RAY PA VIEW: IMPRESSION: Normal limited portable chest.

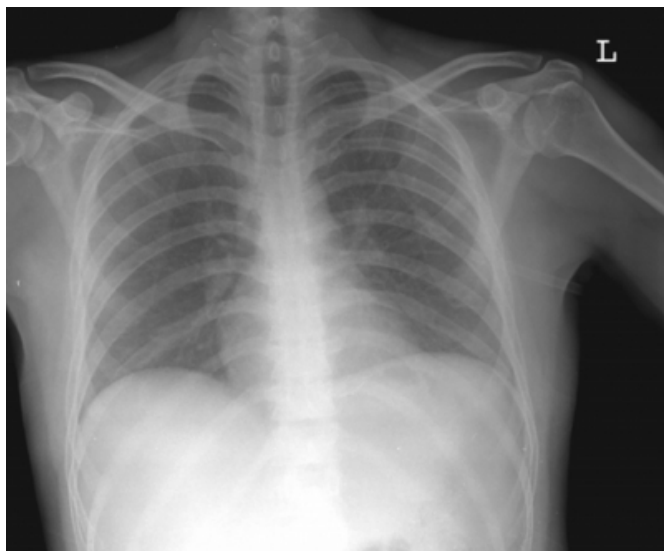


Figure 2

CT CHEST: IMPRESSION: Diffuse lung changes consistent with diffuse pneumonia probably PCP.



LABS: HIV test- Positive. Complete blood count showed low WBC of 3.2×10^3 U/L, low RBC of 291×10^3 U/L, low Hemoglobin of 9.5 g/dl, low Hematocrit of 27.9 and occasional toxic granulations. Basal Metabolic Panel showed low magnesium of 1.5 mEq/L. Fungal blood cultures were positive for *Cryptococcus neoformans*. CSF analysis showed a clear, colorless fluid with opening pressure of 250mm, WBC of 8, RBC of 10, Total Protein of 71 mg/dl, Glucose of 19 mg/dl, occasional yeast cells and cryptococcal antigen titres were 1: 16384. ABG showed a pH of 7.46, PO₂ of 58.2 mm Hg, PCo₂ of 34.2 mm Hg and O₂ saturation of 90.9%. Hepatic panel showed elevated ALT of 58 IU/L, elevated GGT of 45 IU/L, low Albumin of 1.8 g/dl and total protein of 6.1 g/dl. Lymphocyte subset T cells showed an absolute CD4 count of 3. HSV 1 and 2 IgG Ab were positive. Serum Iron and TIBC were low. Serum Cryptococcal antigen was positive with titres of 1:32768. Transbronchial biopsy and silver stain showed *Cryptococcus neoformans*. BAL fungal culture was positive for *Cryptococcus neoformans*. BAL and direct immunofluorescence showed PCP.

Syphilis IgG was non reactive, Serum CMV IgM antibody and CMV DNA qualitative PCR were negative, Serum Toxoplasma IgM antibody was negative, CSF Mycobacterium culture and PCR were negative, BAL Mycobacterium culture was negative, blood mycobacterium culture was negative, CSF HSV1 and 2 DNA were not

detected, CSF VDRL was non reactive, CSF viral cultures were negative, blood parasite screen was negative and Hepatitis panel was normal.

HOSPITAL COURSE AND OUTCOME: The patient's respiratory distress improved and Po₂ as well as O₂ saturation returned to base line 3 days after starting IV bactrim and steroids. After diagnosing cryptococcal meningitis from CSF cultures, we decided to treat the patient with IV diflucan for 2 weeks followed by oral diflucan for 1 week. The reason we chose diflucan instead of IV Amphotericin was because the patient did not have severe symptoms and signs of meningitis such as severe headaches, photophobia, neck stiffness and also due to the high incidence of side effects and poor tolerability with IV Amphotericin. After three weeks of Diflucan therapy, the patient still had headaches, vomiting and CSF cultures were growing *Cryptococcus neoformans*. Hence we decided to stop diflucan and started the patient on IV Amphotericin with careful monitoring of renal function and serum magnesium. Two weeks after initiating IV Amphotericin, the CSF cultures were negative for *Cryptococcus neoformans* on three successive occasions, a week apart i.e., Nov 26, Dec 06 and Dec 12, 2004 and the patient became completely asymptomatic and clinically stable. He was started on Biaxin and Bactrim for MAI and PCP prophylaxis respectively on Oct 20, 2004. Anti-retroviral therapy was initiated on Dec 20, 2004 and he was discharged a week later.

QUESTIONS

Several published studies recommend IV amphotericin over IV diflucan for the treatment of cryptococcal meningitis (2,3). Has anyone tried IV diflucan in patients with minimal or mild signs and symptoms of cryptococcal meningitis with successful outcome or results?

A study has shown that cryptococcal antigen titers can be used to follow therapy and to predict relapse in immunocompetent patients; however, following titers in patients with AIDS has little utility (4). Can serum and CSF cryptococcal antigen titres be used as marker for the progression of the disease and also for the efficacy of treatment? In our patient the titres did not go down with IV diflucan which correlated with the lack of clinical

improvement. However the titres went down after starting IV Amphotericin which correlated with clinical improvement.

How should we manage complications of cryptococcal meningitis such as increased intracranial pressure manifesting as severe headaches, vomiting, photophobia and visual disturbances?. Several studies have shown therapeutic CSF taps as the management of choice (5,6,7). How often should we do therapeutic CSF taps for such patients and how much CSF should we remove in each setting?

There is only one published case report on HIV patient presenting with both PCP pneumonia and Cryptococcal meningitis in PubMed. How frequent can one encounter a HIV patient presenting with both PCP pneumonia and Cryptococcal meningitis?

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