

Serum galactomannan in histoplasmosis in HIV

Ankita Baidya, Charu Goel Sachdeva¹, Priyanka Bhatia², Ankur Pruthi³, Sangeeta Joshi⁴
Departments of Infectious Diseases, ¹Internal Medicine, ²Pathology, ³Nuclear Medicine and ⁴Microbiology, Manipal Hospital, New Delhi, India

Address for correspondence:

Dr. Ankita Baidya, Department of Infectious Diseases, HCMCT, Manipal Hospital, New Delhi, India.

E-mail: drankitabaidya@gmail.com

Abstract

Histoplasmosis is an opportunistic infection (OI) in HIV infected patients. The Diagnosis is challenging due to lack of testing facilities. Hereby we report a young male who presented with fever & rash, was diagnosed with HIV and disseminated histoplasmosis. The timely management with antifungals was started after the of positive serum galactomannan report in the background of appropriate clinical setting.

Key words: Galactomannan, histoplasmosis, immunocompromised

Introduction

HIV is a viral infection caused by retrovirus (RNA virus) that affects the immune system by targeting the helper T cells. The patients with HIV infection are immunocompromised and present with secondary infections. Hereby, we present an unusual case of HIV infection in a young male, who presented with an opportunistic infection, the AIDS-defining illness of disseminated fungal infection (Histoplasmosis) at the time of HIV diagnosis.

Case report

A 36-year-old male patient resident of Delhi, engineer by profession came with complaints of acute onset high-grade fever associated with chills for 15 days and associated weight loss of 10 kg. He received multiple antibiotics outside hospital without much improvement. In hospital, he was started on ceftriaxone and doxycycline. On day 3 of hospital admission, he developed generalized maculopapular rash over the body [Figure 1]. There was no history of loose motions, chronic cough, night sweats, or loss of appetite. The detailed investigations were sent and he was started on intravenous antibiotics and supportive care. The patient continued to have multiple fever spikes. As the patient was not improving, HIV serology was sent after obtaining informed consent. The investigation showed HIV serology reactive with HIV I. Other relevant investigations showed CD4 count 51, leukopenia, hyponatremia (serum sodium 129), and normal procalcitonin. As the patient was having a persistent fever and low CD4 count, a differential diagnosis of atypical infection was kept. Whole-body positron emission tomography computed tomography was done that showed predominant lymphoreticular uptake [Figure 2]. Axillary lymph node biopsy and skin biopsy were taken. Serum galactomannan was also sent that came significantly positive with value of 1.51. The patient was started on liposomal amphotericin B 3 mg/kg. On starting antifungals, the skin lesions improved and fever spikes decreased. The biopsy report showed oval fungal spores [Figure 3a and b]. The patient was given 10 days of induction therapy of liposomal amphotericin B. While, he was undergoing induction therapy he developed a painful perianal rash along with constipation for which surgical opinion was taken. As the perianal lesion was not showing any signs of improvement, suspecting any atypical skin infection, dermatologist opinion was sought. HSV serology was sent, and that was positive. The diagnosis of chronic herpetic ulcer was made and he was started on acyclovir. After he completed the induction therapy, oral itraconazole was started. Antiretroviral treatment was initiated after carefully ruling out other OIs.

The patient became afebrile; the perianal ulcer also healed and is doing well. The final diagnosis was made as advanced HIV with disseminated fungal infection (Histoplasmosis) with chronic herpetic ulcer.

Discussion

Histoplasmosis is a type of the endemic mycoses in patients suffering from HIV infection. Disseminated histoplasmosis is



Figure 1: Maculopapular rash

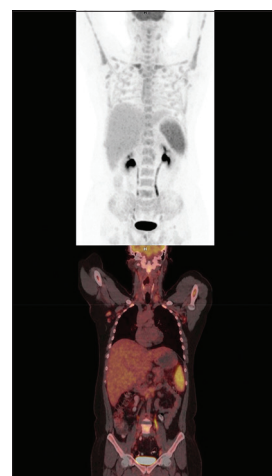


Figure 2: Positron emission tomography-computed tomography image showing lymph node and reticuloendothelial uptake

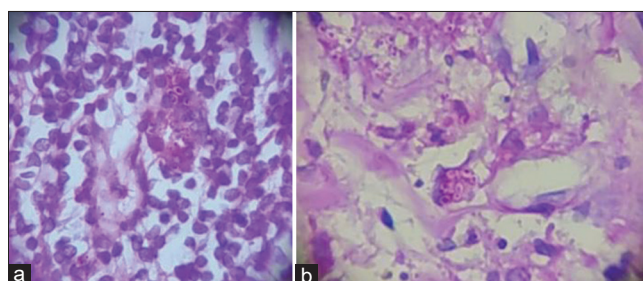


Figure 3: (a) Lymph node biopsy showing PAS-positive fungal spores (b) Skin biopsy showing PAS-positive fungal spores. PAS: Periodic acid-Schiff

Access this article online

Quick Response Code:



Website:

www.ijstd.org

DOI:

10.4103/ijstd.ijstd_92_21

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Baidya A, Sachdeva CG, Bhatia P, Pruthi A, Joshi S. Serum galactomannan in histoplasmosis in HIV. *Indian J Sex Transm Dis* 2022;43:181-3.

Submitted: 30-Sep-2021

Revised: 30-Sep-2021

Accepted: 15-Jun-2022

Published: 01-Aug-2022

a relentlessly progressive granulomatous disease that can have very similar clinical presentation to many other granulomatous diseases including tuberculosis.^[1] Histoplasmosis may present clinically in different forms asymptomatic infection, to localized disease such as an acute or chronic pulmonary infection, mediastinal fibrosis or granulomas, or disseminated histoplasmosis. The development of disseminated disease occurs when there is impaired cell-mediated immune responses.^[2] The spectrum of disseminated infection includes acute, severe, life-threatening sepsis and chronic, slowly progressive infection.^[3] In India, the disease is reported in the Indo-Gangetic plains. It has been associated with moist soil. The true burden of HIV-associated histoplasmosis is either not fully known or neglected since it is not a notifiable disease. Diagnostic accuracy has greatly improved in recent years due to antigen and antibody detection tests, but still, due to lack of widespread availability, it is not possible to get it done in all suspected patients. A strong index of clinical suspicion is always required.

Serum galactomannan is another test that can be an indirect marker and as such can be used in case of strong clinical suspicion and in case the clinical picture is not resembling aspergillosis.

In the current case, we also used the serum galactomannan, as a marker of invasive fungal infection. In immunocompromised host, like HIV, the antibody response may not be appropriate for diagnosing this fungal infection, Histoplasma antigen is not commonly available, and isolation of this fungus in culture can take several days, as such, the serum galactomannan, an antigen can be used as a presumptive marker for the invasive fungal infection including histoplasmosis, to timely initiate the antifungals. Few studies have looked for the usefulness of serum galactomannan in histoplasmosis and found that around 69% of samples positive for Histoplasma antigen were

positive for galactomannan assay (Histoplasmosis-associated cross-reactivity in the Bio-Rad Platelia Aspergillus enzyme immunoassay.^[4]

It is uncommon to find invasive aspergillosis (IA) in HIV patients, but still, it is important to rule out IA in HIV patients due to high mortality of the same in immunocompromised host.^[5] In our patient, there was no clinical or radiological features suggestive of IA, and other symptoms and clinical profile were consistent with disseminated histoplasmosis. As such, with the strong clinical suspicion and serum galactomannan report, we started the liposomal amphotericin B in the recommended dose. This has led to timely initiation of antifungals in the patient and better outcome.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Mansoor CA, Bhargavan PV, Rajanish R, Nair LR. Disseminated histoplasmosis. *Indian J Orthop* 2013;47:639-42.
2. Subramanian S, Abraham OC, Rupali P, Zachariah A, Mathews MS, Mathai D. Disseminated histoplasmosis. *J Assoc Physicians India* 2005;53:185-9.
3. Kauffman CA. Histoplasmosis: A clinical and laboratory update. *Clin Microbiol Rev* 2007;20:115-32.
4. Wheat LJ, Hackett E, Durkin M, Connolly P, Petraitiene R, Walsh TJ, *et al.* Histoplasmosis-associated cross-reactivity in the BioRad Platelia Aspergillus enzyme immunoassay. *Clin Vaccine Immunol* 2007;14:638-40.
5. Denning DW, Follansbee SE, Scolaro M, Norris S, Edelstein H, Stevens DA. Pulmonary aspergillosis in the acquired immunodeficiency syndrome. *N Engl J Med* 1991;324:654-62.