Case Report

An Unusual Case of Primary Human Immunodeficiency Virus Infection Presenting as Mononucleosis-like Syndrome and Acute Aseptic Meningoencephalitis. Report of a Case and Review of the Literature

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Abstract

Clinical presentation of primary human immunodeficiency virus (HIV) infection includes a wide spectrum of manifestations from asymptomatic infection to a symptomatic and severe illness. Central nervous system involvement should be always considered as a severe clinical form of primary HIV infection. Physicians should be aware to the broad clinical spectrum of primary HIV infection. We report a case of a female with diagnosis of mononucleosis-like syndrome and acute aseptic meningoencephalitis during primary HIV infection.

Keywords: Aseptic meningoencephalitis, mononucleosis-like syndrome, primary human immunodeficiency virus infection

Introduction

Primary human immunodeficiency virus (HIV) infection is a syndrome that includes a mononucleosis-like illness as the most common clinical manifestation. This clinical and acute syndrome appears 2-4 weeks after HIV infection and generally includes fever, pharyngitis, fatigue, malaise, a maculopapular and pruritic skin rash, with predominant distribution on the trunk and generalized lymphadenopathy.[1,2] However, less common clinical presentations of primary HIV infection include aseptic meningitis, acute hepatitis, pneumonitis and gastrointestinal manifestations as diarrhea, nausea, vomiting, and esophageal ulcers.[3-5]

Here, we report a case of a female patient who developed a symptomatic primary HIV infection with mononucleosis syndrome and acute aseptic meningoencephalitis.

Case Report

A 47-year-old woman was admitted to the HIV/AIDS Department of our hospital with 10 days history of fever (38-39°C), headache, diffuse myoarthralgias of the arms and legs, and photophobia. Her past medical history was unremarkable, but she reported unprotected sex with a HIV-seropositive regular sexual partner during the last year. At admission, the patient presented fever with chills and moderate to severe headache. Physical examination revealed a mild neck rigidity, generalized lymphadenopathy, and splenomegaly. Relevant laboratory findings include normal red blood cells, white blood count of 12.7×10^9 cells/L with lymphomonocytes predominance (70%), and 12% of atypical lymphocytes. Liver and renal functions were normal. A chest radiograph was also normal. Abdominal ultrasound revealed homogeneous splenomegaly. Blood and urine cultures were negatives. A magnetic resonance imaging scan of the brain showed a contrast-enhanced of the meninges in fluid-attenuated inversion recovery and T1-weighted sequences. A lumbar puncture was performed; cerebrospinal fluid (CSF) examination showed proteins 0.85 g/L and 35 cells/mm^3 with 100% of mononuclear cells. Serological tests for hepatitis A, B, and C viruses, cytomegalovirus, and syphilis were negatives. Toxoplasmosis and Epstein-Barr virus had positive results for IgG antibodies. A polymerase chain reaction was negative to detect DNA-genome of herpes viruses. A rapid enzyme-linked immune sorbent assay (ELISA) for HIV was positive; the p24 antigen was reactive and the western blot (WB) was indeterminate

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with a positive band for HIV p24. The plasma viral load was 1,980,000 copies/mL ($\log_{10}$6.9) and the CD4 T-cell count was 470 cells/uL (7%). A CSF viral load was performed and revealed 150,000 copies/mL ($\log_{10}$5.1).

With diagnosis of primary HIV infection, the patient was started on highly active antiretroviral therapy (HAART) based on zidovudine plus lamivudine plus efavirenz with a good clinical, immunological, and virological response. Two weeks later, a 4th generation ELISA was positive and the WB analysis showed reactivity for all the antibodies.

Two years later, the patient remains in a good clinical condition; her plasma viral load is undetectable and the CD4 T-cell count is 845 cells/μL (37%) and she continues to receive the same scheme of HAART.

Discussion

During primary HIV infection, 50–90% of patients present a viral and unspecific syndrome that is generally self-limiting after 2-6 weeks.[5,6] After 3-6 months, patients enter in the chronic phase of the HIV/AIDS disease.

Fever, pharyngitis, myalgias, arthralgias, and diffuse lymphadenopathies are generally included in the clinical picture. Neurological involvement appears to be related with a poor prognosis and is an evidence that HIV infects the central nervous system (CNS) early during the primary retroviral infection.[7-9] Headache is a frequent manifestation of primary HIV infection and is present in more than 50% of symptomatic patients.[10] However, a complete meningeal syndrome with headache photophobia, neck stiffness and CSF changes compatible with aseptic, viral or lymphocytic meningitis is rare. In a French study, the prevalence of aseptic meningitis during primary HIV infection was 6%.[10] Other neurological manifestations of primary HIV infection include a Guillain-Barré syndrome and peripheral neurophaties. Aseptic acute meningoencephalitis associated with primary HIV infection presents changes in CSF composition as mild to moderate hyperproteinorrachia and lymphomononuclear pleocytosis, as it could be seen in our patient.

The nonspecific symptoms of primary HIV infection often retard the diagnosis, especially when patients present with unusual manifestations. In this setting, early diagnosis is necessary not only to the clinical, immunological and virological benefits of HAART. Primary HIV infection is associated with a peak viremia and a concurrent viral load in genital fluids. The early identification and treatment of this kind of patients could be a good opportunity to reduce the possibility of sexual transmission.[4,9]

In general, laboratory diagnosis of primary HIV infection includes the following tests: ELISA for screening and WB for confirmation. However, for early diagnosis and during the window period, the dosage of the p24 antigen of the viral core and the HIV RNA (used for quantification of the plasma viral load) can be used and are strongly recommended. In the first evaluation, our patient presented a reactive ELISA test with an indeterminate WB result. The p24 antigen was positive with a high plasma viral load (>6$\log_{10}$).[4] Furthermore, in our patient, the CSF viral load was high (>5$\log_{10}$) as a clinical evidence of the early penetration and replication of HIV in the CNS. HAART is recommended in patients with primary HIV infection and severe manifestations as neurological involvement.[4]

Conclusion

Primary HIV infection should be included in the differential diagnosis of all patients with acute aseptic or viral meningoencephalitis. Early diagnosis followed by HAART improves the prognosis and reduce the risk of sexual transmission of the retroviral infection.

References

1. Kaufmann GR, Duncombe C, Zaunders J, Cunningham P, Cooper D. Primary HIV-1 infection: A review of clinical manifestations, immunologic and virologic changes. AIDS Patient Care STDS 1998;12:759-67.
2. Cooper DA, Gold J, Maclean P, Donovan B, Finlayson R, Barnes TG, *et al.* Acute AIDS retrovirus infection. Definition of a clinical illness associated with seroconversion. Lancet 1985;1:537-40.
3. Tattevin P, Camus C, Arvieux C, Ruffault A, Michelet C. Multiple organ failure during primary HIV infection. Clin Infect Dis 2007;44:e28-9.
4. Clark SJ, Saag MS, Decker WD, Campbell-Hill S, Roberson JL, Veldkamp PJ, *et al.* High titers of cytopathic virus in plasma of patients with symptomatic primary HIV-1 infection. N Engl J Med 1991;324:954-60.
5. Daar ES, Moudgil T, Meyer RD, Ho DD. Transient high levels of viremia in patients with primary human immunodeficiency virus type 1 infection. N Engl J Med 1991;324:961-4.
6. Boufassa F, Bachmeyer C, Carré N, Deveau C, Persoz A, Jadand C, *et al.* Influence of neurologic manifestations of primary human immunodeficiency virus infection on disease progression. SEROCO Study Group. J Infect Dis 1995;171:1190-5.
7. Vanhems P, Lecomte C, Fabry J. Primary HIV-1 infection: Diagnosis and prognostic impact. AIDS Patient Care STDS 1998;12:751-8.
8. Schacker T, Collier AC, Hughes J, Shea T, Corey L. Clinical and epidemiologic features of primary HIV infection. Ann Intern Med 1996;125:257-64.
9. Tsai MS, Tsai YT, Pan CT, Fang KH. Acute human immunodeficiency virus infection presenting as mononucleosis-like illness, acute hepatitis, and aseptic meningoencephalitis. Kaohsiung J Med Sci 2012;28:628-9.
10. Constantine NT, Zink H. HIV testing technologies after two decades of evolution. Indian J Med Res 2005;121:519-38.

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