

Toxoplasmosis in a Patient with HIV: A Case Report

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Abstract

Introduction: *Toxoplasma gondii* is one of the most frequent infectious parasites distributed worldwide.

Case Presentation: A 26-year-old male patient was diagnosed as HIV positive. Finally, immunological and biological studies showed increased neutrophils count, increased C-reactive protein and positive Toxo-IgG.

Conclusions: It seems that checking the level of Toxo-IgG in patients with HIV infection is needed and in case of uncertainty, the magnetic resonance imaging (MRI) will be helpful.

Keywords: *Toxoplasma* sp., HIV, Toxo-IgG

1. Introduction

Toxoplasma gondii is one of the most frequent infectious parasites distributed worldwide (1). It is a ubiquitous intracellular protozoan pathogen that infects 15% to 85% of the world's adult human population depending on geographic location and is a well-recognized cause of illness among patients with human immunodeficiency virus (HIV) infection (2). *Toxoplasma gondii* can infect human by tissue cysts ingested in the undercooked meat of interface host (3, 4). However, patients with HIV are at risk of developing acute toxoplasmosis due to reactivation, usually when the CD4+ count decreases to less than 200 cells/mm³; there is higher risk when the CD4+ count is less than 50 cells/mm³ (3-6).

This infection is asymptomatic and generally affects patients with immunocompetency (6). Brain, myocardium, retina and skeletal muscle are the main organs infected by the parasite (7-9). Here is described a case of cerebral toxoplasmosis in a patient with HIV.

2. Case Presentation

A 26-year-old male patient was recognized as HIV positive. At first, the *Toxoplasma* infection was asymptomatic, but the patient could not move or talk and also had fever for three days. On examination, patient was vitally stable. His Glasgow Coma scale (GCS) was 15/15. Other symptoms were increased tone bilaterally, the Kernig signs and the Brudzinski signs in neck, low bulk, reflexes brisk and

power 2.5 in all limbs. Sonography and computed tomography (CT) scan of the abdomen, pelvis and lung X-ray were normal.

Immunological and biological studies showed increased neutrophils count, increased C-reactive protein and positive Toxo-IgG.

The results of brain magnetic resonance imaging (MRI) stated as follows: There were multiple high signals on T2, flair in cortical, subcortical, white mater of both cerebral and cerebellar hemispheres and brain stem (pons and mid brain) findings could be related to multifocal abscess formation, but progressive multifocal leukoencephalopathy (PML) was considered as differential diagnosis. Brain MRIs with contrast diffuse multiple focal (low on T1, high in T2 and flair) in both hemispheres and also in brain stem showed ring enhancement after contrast and also proved restriction pattern on ADC and dystrophia myotonica 1 (DM1) sequences. Above findings were suggested for microabscesses in toxoplasmosis.

Finally, patient was discharged from hospital with complete health.

3. Discussion

Infection of human with toxoplasma has a worldwide extent with variable prevalence based on eating habits, environment, age, etc. (1-4). It is usually asymptomatic in most of individuals with immunocompetency (1-4). This infection can be a biohazardous disease when it takes places in patients with HIV and low CD4 positive lymphocytes (5-7). It is stated that the prevalence of toxoplasma

meningoencephalitis ranges from 3% to 50% (5, 7). In the current case, sonography and CT scan of the abdomen and pelvis and lung X-ray were normal. Immunological and biological studies showed increased neutrophils count, increased C-reactive protein and positive Toxo-IgG. The results of brain MRI also proved toxoplasmosis. Similar manifestations of toxoplasmosis in patients with HIV infection were reported in other studies (6-10). Due to the prevalence of toxoplasmosis in Iran, it seems that checking the level of Toxo-IgG in patients with HIV and brain symptoms, and also investigating clinical symptoms in terms of neurological aspects are necessary. In the case of uncertainty, performing MRI in the patients with HIV infection will be helpful.

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Footnotes

Authors' Contribution: All authors had equal roles in study design, practical work, and manuscript writing.

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