Case report:

Gastroenteritis due to Isospora belli in immunocompromised teenager

Dr. Dnyaneshwari P Ghadage, Dr. Rupali J Mali, Dr. Archana B Wankhade, Dr. Arvind V. Bhore

Professor and Head of the Department, Department of Microbiology, SKNMC & GH, Pune, Maharashtra, India
2,3 Lecturer Department of Microbiology, SKNMC & GH, Pune, Maharashtra, India.
4 Dean, SKNMC &GH, Pune, Maharashtra, India.

Corresponding author: Dr. Rupali J. Mali

Abstract:
Diarrhea is one of the major complications in patients living with HIV/AIDS in developing world. Isospora belli is one of the common causes for watery diarrhea in immunocompromised patients. Many patients with HIV are diagnosed at late stage of the disease. Indicator infections like isospora belli will help in early diagnosis and treatment of HIV and it will definitely improve the quality of life in young patients. The diagnosis of Isospora belli is done by the examination of stool. Amongst the intestinal coccidian parasites isosporiasis can effectively be treated with trimethoprim-sulfamethoxazole. Isospora belli is potentially treatable infectious agent in patients with HIV/AIDS. Herewith we report a case of immunocompromised teenager having watery diarrhea due to Isospora belli.

Key words: Watery diarrhea, Isospora belli, Immunocompromised individual

Introduction:
Diarrhea leads to high morbidity and mortality in HIV infected patients. Cryptosporidium, Isospora, Cyclospora, and Microsporidia are common opportunistic enteric parasites encountered in these patients. Proper and early identification of these opportunistic parasites is important in view of AIDS explosion in India. Isospora belli was first described by Virchow in 1860 in villi of intestinal mucosa at autopsy. It is an AIDS-defining illness if infection persists >4 weeks. Infection is acquired through fecal contaminated food or water & generally diagnosed by examination of stool and/or duodenal biopsy specimens with acid fast staining.

Case report:
17 year old college going female student presented to our hospital with history of 7-8 painless, whitish, watery loose motions 6-8 per day since 5-6 days, without blood and mucous. On examination patient had moderate dehydration. On abdominal examination diffuse tenderness was present. Stool sample was received for routine microscopy examination. The saline mount of stool showed many cysts of Isospora belli measuring about 20um -33 um X 10 um -19 um in size with granular center. (Fig. 1) Some cyst contained two sporocyst. Size and shape of cysts were variable few being long and slender while others were shorter. Stool smear was made and modified acid fast staining was performed. Pink colored (acid fast) oocysts of Isospora belli were seen.(Fig 2) Haemoglobin was 12.5gm. Total leukocyte count was 11,000. HIV ELISA was positive. Post test counseling was done. Patient responded well to the treatment with oral cotrimoxazole. Patient was referred to antiretroviral treatment (ART) centre.
Discussion:
Isospora belli is a coccidian parasite of human beings, inhabiting small intestine, related to Cryptosporidium, Cyclospora, Toxoplasma. It causes gastroenteritis in immunocompromised as well as immunocompetent patients. Irrespective of widespread awareness about HIV large number of patients are diagnosed at very late stage of the disease. Isosporiasis is one of the indicators of Immunocompromised status of patients. Earlier studies from North India had found Cryptosporidium to be the most common parasite while the prevalence of Isospora belli was found to be much lower. Studies from South India have also reported a higher prevalence of Isospora belli than Cryptosporidium. In India, the prevalence of I. belli infection is about 12% in AIDS patients. Pathogenesis of isosporiasis is characterized by invasion of epithelial cells of distal duodenum and proximal jejunum with resulting cell damage. Extraintestinal forms are rare. Isospora belli is diagnosed by detection of the oocysts in stool or rarely bile samples. Oocysts can be observed in wet preparations, iodine stained preparations or acid-fast stained smears of concentrated stool specimens. Stool smears can also be stained with auramine- rhodamine, haematoxyline and eosin and Giemsa stains. careful examination of stool sample and use of concentration techniques increases rate of detection of Isospora belli cyst. Advances in the diagnosis of infectious diseases occur regularly, although the first form of diagnosis of parasitic infections is still by light microscopy of stool by an experienced microscopist. Along with stool culture stool microscopy is equally important. Many coccidian parasites are considered AIDS-defining opportunistic pathogens according to CDC. Detection of these parasites by easy and relatively less costly techniques will direct clinicians to screen such patients for HIV at early stage. This will help in early diagnosis and treatment of patient and will offer quality life to young patients.

(Fig.1) Oocyst of Isospora belli in wet mount of stool
(Fig.2) Oocyst of Isospora belli in modified ZN stain
References:


