Case Report: *Isospora belli* Infection in A Renal Transplant Recipient

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SUMMARY: *Isospora belli*, an opportunistic protozoon, is one of the most commonly recognized causes of diarrhea in patients with acquired immunodeficiency syndrome (AIDS). Infection is acquired through fecal contaminated food or water, and generally diagnosed by examination of stool and/or duodenum biopsy specimens with acid-fast staining. Here, we present an uncommon case, chronic diarrhea caused by *I. belli* infection in a patient who is a renal transplant recipient.

Key Words: *Isospora belli*, chronic diarrhea, renal transplant

INTRODUCTION

*Isospora* belongs to the coccidia subclass in the family *Eimeria*. *Isospora belli* is only known to infect humans. *Isospora (I.) belli* is transmitted mainly by ingestion of infective oocysts in faecal contaminated food or water. Infected individuals may be asymptomatic carriers or suffer gastrointestinal disease ranging from mild to severe (10). Clinically, *I. belli* most commonly mimics giardiasis, with a malabsorption syndrome characterized by loose, foul-smelling stools. *I. belli* infection in immunocompromised patients has rarely been described; this is the second report of *I. belli* infection in a renal transplant recipient, in Turkey.

CASE REPORT

A 32-year-old man had undergone renal transplantation in June 1993. He was admitted to the emergency room at Gülhane Military Medical Faculty Hospital, Ankara, on August 2003, with an acute onset of abdominal cramps, watery diarrhoea, low-grade fever, and nausea. The diarrhoea was described as pale yellow without blood or mucus. He had 8-10 episodes per day. Urinalysis did not show hematuria or signs or urinary tract infection. Physical examination was normal, except the auscultation of high-amplitude bowel sounds. *I. belli* infection in immunocompromised patients has rarely been described; this is the second report of *I. belli* infection in a renal transplant recipient, in Turkey.
were detected by acid-fast stain. No other intestinal parasites were determined at that time. He was treated with ciprofloxacin for Salmonella typhi C, resulting in improvement. Several weeks later, he was readmitted to Gülhane Military Medical Faculty Hospital, because of abdominal cramps, watery diarrhoea, and weight loss. Results of conventional stool examinations were negative, but once more *I. belli* oocysts were detected by acid-fast stain. Therefore the patient was again treated ciprofloxacin intravenously for three days. One week later, *I. belli* oocysts were still detected on acid-fast stained preparations. Complete improvement of the patient was achieved at doses (160 mg of trimethoprim and 800 mg of sulfamethoxazole) of one double-strength (DS) tablet bid orally TMP-SMX-DS for 10 days.

**DISCUSSION**

*I. belli* is distributed worldwide particularly endemic in tropical and subtropical regions but has been infrequently detected in stool specimens. Although the infection frequently occurs in the immunocompromised patient, it can also cause disease in adults and children. The diagnosis of *I. belli* is done by the examination of stool and/or duodenum biopsy specimens. Acid-fast staining is used for the detection of *I. belli* oocysts. They are easily determined in stool as long as there are adequate numbers. Fluorescence microscope is used for *Isospora* detection as it can be stained by the fluorescent dyes auramine - rhodamine. The routine diagnosis of *I. belli* infection is difficult, especially if the concentrated sediment is from polyvinyl alcohol – preserved stool. The oocysts of the organism, is hard to differentiate from some matters in faeces, and making an ultimate diagnosis. The recent emergence of some of the intestinal coccidian as a pathogen in subjects with immune deficiency syndromes has led to the use of specialized permanent staining methods for their recognition and identification. A variety of acid-fast stains have proven to be greatly valuable in the diagnosis of *I. belli* infections

There are some reports indicating that it is easier to identify autofluorescent oocysts with fluorescence microscopy because it does not require staining. However, we detected even the small amounts of oocysts in this patient’s stool by acid-fast staining. It should be noted that if the stool preparations are not examined carefully, oocysts might be misinterpreted due to the faecal compounds by iodine staining. With oocysts of *I. belli*, the inner germinal mass (sporoblast) stains an intense red (Figure 1).

![Figure 1. Isospora belli oocysts in stool smear preparations. A: Iodine staining (x400); B-D: acid-fast staining](image)

Although the distribution of *I. belli* is worldwide (3, 7), it is rarely reported from most countries including Turkey. There were five cases of isosporiasis between 1994 and 2006, one of them was renal transplant patient (12), one of them was congenital diserythropoiesis patient (9), two of them were AIDS patients (3, 11), and last one was bronchoalveolar carcinoma (7). To our knowledge this is the second reported case of *I. belli* infection of a renal transplant recipient in Turkey. In the detection of coccidian parasites asit-fast staining technique is recommended besides routine ova and parasite (O&P) concentration methods. The detection of human intestinal coccidian parasites depends on the through examination of concentrated stool specimens, but besides O&P examination, acid-fast stain is suggested for *Isospora* oocysts (5).

In conclusion, isosporiasis should be suspected in immunocompromised patients, transplant patients and those infected with human immunodeficiency virus (HIV), with chronic persistent diarrhoea, abdominal cramps, and weight loss. However, symptoms are non-specific and stool samples should be interpreted cautiously for the possible existence of O&P especially for *I. belli* oocysts. Also, TMP-SMX could be the drug of choice in patients with chronic stubborn diarrhoea suffering from isosporiasis.
REFERENCES


