Isospora belli Diarrhoea as a Presenting Feature of AIDS

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Isospora belli, an opportunistic coccidia, has recently been reported as a cause of severe diarrhoea in AIDS patients. We report a 40-year-old female, who presented with prolonged watery diarrhoea and weight loss. She had received blood transfusions in 1985 for a fractured femur. She was positive for human immunodeficiency virus antibodies. Her CD4 (helper) cells were markedly diminished. Isospora belli oocysts were repeatedly recovered from her stool specimens. She initially responded to trimethoprim-sulphamethoxazole therapy. However, eventually she expired. Patients with severe, chronic and intractable diarrhoea should be investigated for Isospora belli infection and underlying AIDS.

Chronic watery diarrhoea due to coccidial protozoan parasites occurring in immunocompromised hosts, has been largely due to cryptosporidium. More recently several reports have emphasized the increasing prevalence of such a diarrhoeal illness due to Isospora belli, a coccidial parasite related to cryptosporidium. The majority of such cases have been amongst Haitian patients with Acquired Immune Deficiency Syndrome (AIDS), but the numbers of North American and European patients afflicted are increasing.

We have recently seen and managed a 40-year-old Saudi female, who presented with chronic wasting diarrhoea due to Isospora belli, and was subsequently diagnosed to have AIDS. To our knowledge, this appeared to be the first case in Saudi Arabia presenting in this way.

Case Report
A 40-year-old Saudi married mother of ten, presented to our institution in March 1987 with a 10-month history of watery diarrhoea and weight loss of around 25% of her total body weight. The past medical history was remarkable as a road traffic accident resulting in moderate trauma had required the patient to have a blood transfusion 2 years earlier. Social history revealed that she was the first of two communal wives but had not been sexually active for at least 4 years. Physical examination revealed a chronically ill-looking female, who was in no acute distress, was afebrile and had no lymphadenopathy or hepatosplenomegaly. Haematological parameters confirmed a moderate degree of pancytopenia with a total leucocyte count of $2.0 \times 10^3/\mu l$, a haemoglobin of 80.5 g/l and a platelet count of $50 \times 10^3/\mu l$. Biochemical analysis was essentially unremarkable with the exception of mildly abnormal liver functions of a hepatocellular dysfunction type. Screening for human immunodeficiency virus antibody was positive by an Elisa method (Abbott), and confirmed by the Western blot technique. Hepatitis B surface antigen was positive. Her husband was also tested for HIV by both Elisa and Western blot techniques and found to be negative. Her lymphocyte subsets revealed a marked reversal of CD4 (helper cell) to CD8 (suppressor

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cell ratio. The stool volume was 5 l/24 hours and in three of three fresh specimens, coccidial oocysts were identified with the use of saline wet mounts and slides stained with Ziehl-Neelsen's technique.\(^1\)\(^2\) The oocysts noted were approximately 20 μm by 15 μm, oval, acid-fast and contained two sporoblasts.

The patient received intravenous hydration, hyper-alimentation and oral trimethoprim 160 mg plus sulphamethoxazole 800 mg — initially four doses per day for 10 days and subsequently two daily doses until substantial reduction of her diarrhoea occurred at 6 months. Repeated stool examinations were negative for *Isospora belli* oocysts. Three months following the cessation of her trimethoprim-sulphamethoxazole therapy, her diarrhoea relapsed and treatment was re-started at the original dose, with resolution of her symptoms. However, she continued to have repeated bouts of severe diarrhoea despite being placed on prophylactic trimethoprim-sulphamethoxazole therapy. She was shedding *Isospora belli* oocysts intermittently. She eventually expired 18 months after being diagnosed as having AIDS. Terminally her cd4 (helper) cell count was 5 per μl (normal > 400 μl) and she had a cd4:cd8 ratio of 0.11 (normal ≥ 1). No autopsy was performed. Death appeared to be due to severe malnutrition caused by chronic diarrhoea.

**Discussion**

Since 1982, there has been an ever-increasing number of transfusion-related acquired immune deficiency syndrome (AIDS) cases.\(^6\)\(^7\) This has led to the identification and subsequent implementation of a host of guidelines aimed at the identification of the donor population transmitting the human immune deficiency virus (HIV-1) and the transfusion recipient at highest risk.\(^8\) For countries such as Saudi Arabia, which have depended substantially on imported blood products, these guidelines have brought relief.\(^9\)

Although outbreaks of isosporiasis have been described in some patients without AIDS, in the vast majority this is a self-limiting illness that is usually characterized by a fairly acute clinical presentation.\(^10\) In recent years, *Isospora belli* has been increasingly recognized as an opportunistic pathogen in patients with AIDS who typically developed a chronic watery diarrhoea associated with significant malabsorption. Our patient presented with a protracted course of such an illness and met the Centers for Disease Control (CDC) criteria for the diagnosis of AIDS.\(^11\) The absence of any significant risk factors for AIDS in our patient led us to speculate the relevance of the blood transfusion which she had had 2 years earlier. The origin of the blood products could not be traced but it is highly probable that they had been imported from the USA, in keeping with most of the blood products utilized in Saudi Arabia at that time.\(^9\)

Our patient's response to trimethoprim-sulphamethoxazole was somewhat atypical. Most cases seem to respond dramatically, usually within 48 h of initiation of therapy.\(^2\) Our patient responded insidiously and continued to excrete oocysts for nearly 6 months. The relapse of her diarrhoea is characteristic of the natural history of isosporiasis in patients with AIDS.\(^2\)

Following a therapeutic course, trimethoprim-sulphamethoxazole combination has also been used for prophylaxis in patients with AIDS and *Isospora belli* infection.\(^12\) In our patient this was attempted with limited success. She would respond for brief periods but then her diarrhoea would relapse with the same intensity. In conclusion, patients with severe, chronic and intractable diarrhoea should be investigated for *Isospora belli* infection and an underlying acquired immunodeficiency syndrome.

**References**


