



HIV-associated *Isospora belli* and *Strongyloides stercoralis* infection

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ABSTRACT

A 60 year old male presented with episodes of diarrhoea since one and half months . He gave history of similar complaints on and off for the past 6 – 7 years . The stool sample received was examined by saline and iodine mount and modified Ziehl Neelson method . The wet mount of stool revealed rhabditiform larvae of *Strongyloides stercoralis* . Stool smear stained by modified Z - N stain showed acid fast (pink) oocysts of *Isospora belli* . He was treated with Co – trimoxazole for *Isospora* and Metronidazole for *Strongyloides* . A follow up was done after 40 days and the stool was negative for *Isospora* and *Strongyloides* .

Key words : HIV, *Isospora belli* , *Strongyloides stercoralis*

INTRODUCTION

Isospora belli , *Cryptosporidium parvum* and *Blastocystis* are the major opportunistic intestinal parasites observed in HIV / AIDS patients [1]. Some immunodeficient individuals are predisposed to severe and prolonged diarrhoea caused by opportunistic parasites , particularly *I . belli* , which is one of the most commonly identified causes of chronic diarrhoea in AIDS patients [2]. There is also evidence that HIV infection predisposes to chronic Isosporiasis [3].

Strongyloides stercoralis causes persistent and fatal disseminated infections in immunocompromised hosts [4]. It affects an estimated 100 - 200 million individuals worldwide [5]. It is an intestinal nematode with a complex life cycle capable of a free living cycle , a parasitic cycle and autoinfection [6].

MATERIALS AND METHODS

The stool sample received was examined for saline and iodine mount and modified Ziehl-Neelson stain . In agar culture method the stool was placed on a blood agar plate and incubated for 2-3 days . Screening was done for HIV, HB_sAg, HCV and RPR. Sputum was collected and Ziehl-Neelson technique was performed for *Mycobacterium tuberculosis* . Routine biochemical investigations were done . CD₄ count was also performed . Blood culture was done to check dissemination of *strongyloides* larvae.

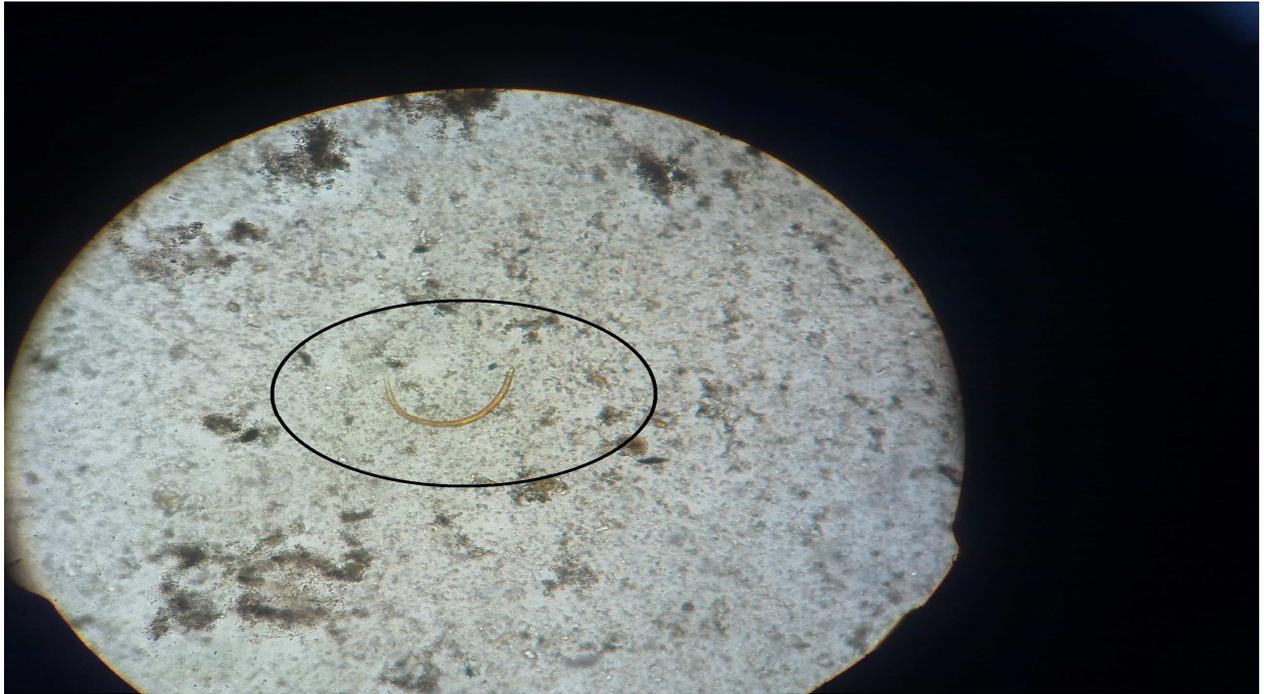


FIG.1:Strongyloides larva In Iodine Mount



FIG.2: Agar culture method showing visible tracks of larva

RESULTS AND DISCUSSION

A 60 year Male , carpenter presented with 10-12 episodes of diarrhoea . No pain in abdomen , no vomiting . No blood and mucous in stool . The wet mount of stool revealed rhabditiform larvae of *Strongyloides stercoralis* also observed in iodine mount (fig.1) . Stools smear stained with modified Z-N stain showed acid fast (pink) oocysts of *Isospora belli* . The patient was advised screening for HIV . He turned out to be

HIV reactive . HB_sAg , HCV and RPR were non reactive . AFB negative . The routine biochemical investigations were within normal limits . CD₄ count was 274/cmm .

Isosporiasis is a chronic diarrhoeal illness in AIDS patients , caused by the protozoan *Isospora belli* . The parasitic infection has been commonly reported from different centres of India [7]. Lanjewar found prevalence of *I. belli* infection 12% in AIDS patients [8]. Kumar et al have found incidence of *I. belli* infection 18.6% [9]. Isosporiasis of the gastrointestinal tract responds readily to therapy with trimethoprim – sulphamethoxazole [10]. In the present case study , the patient was given Co-trimoxazole for treatment of *Isospora* infection . After forty days when the patient came for follow up the stool sample was negative for *Isospora belli* .

I. belli tended to occur less frequently during follow up . After adjustment of CD₄ cell count , patients receiving Co - trimoxazole prophylaxis were found to be at a lower risk of *I. belli* infection [11].

Strongyloides is unique amongst intestinal nematodes in its ability to persist in humans for many years through autoinfective cycle [12]. In agar culture method , the stool is placed on a nutrient agar plate and incubated for atleast 2 days . As the larvae crawl over the agar , they carry bacteria with them , creating visible tracks [13]. The stool sample was inoculated on blood agar and similar results were observed. The term disseminated infection is often used to refer to migration of larvae to organs beyond the range of the pulmonary autoinfective cycle . Enteric bacteria , which can be carried by the filariform larvae or gain access through intestinal ulcers , may affect any organ system [5]. However blood culture was negative in our case study indicating no dissemination .

The patient was given metronidazole for the treatment of strongyloidiasis . On follow up , no larva of strongyloides were found .

Previous reports from India have shown that prevalence of strongyloides in HIV infected patients ranged from 0.5 - 3% . One study conducted in northern India showed a high prevalence of 27.3% [4]. In a study by Chordia et al 10 out of 14 cases were diagnosed with HIV at the time of or within a month of detection of strongyloides larvae , [4] which is also true in our case .

Cryptosporidium , *Isospora* and *Strongyloides stercoralis* alone or in combination were present in 29 of the 77 patients . The presence of these parasites highlights their potential for immunocompromised patients with AIDS . Diarrhoea due to isosporiasis responsive to treatment , hence their identification has therapeutic implications as well [14].

CONCLUSION

First sample was collected on 25th of August 2012 . *Isospora belli* and *Strongyloides stercoralis* were found in the stool sample . Patient was put on treatment with Co-trimoxazole and metronidazole respectively . He came for follow up on 10th of October 2012 i.e, after forty days . The stool sample was negative for *Isospora* and *Strongyloides* .

Therefore early detection and treatment of these parasites are important to improve the quality of life of HIV/AIDS patients with diarrhoea and reduce the morbidity and mortality. .

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