

# *Hymenolepis nana* in A Renal Transplant Recipient: To Treat or Not to Treat?

Syafinaz A N, MPath, Hamat R A, MPath, Malina O, M. Comm. Health, Siti Norbaya M, MPath, Niazlin M T, MPath, Jamal F, MRCPATH

Department of Medical Microbiology and Parasitology, Faculty of Medicine and Health Sciences, UPM, Serdang, Malaysia

## SUMMARY

A case of hymenolepiasis in a renal transplant recipient. Issues discussed include the benefit of anti-parasitic agents as well as the preventive measures.

## KEY WORDS:

*Hymenolepis nana*, Renal transplant, Transplant recipient, Intestinal parasite

## INTRODUCTION

Intestinal parasitic infection is common and is considered non-critical in a healthy individual. However, in an immunocompromised patient the disease may become chronic. *Hymenolepis nana* is an intestinal cestode causing tapeworm infection in humans with a worldwide distribution. Here, we present a case of a renal transplant recipient who presented with abdominal pain and developed diarrhea. Ova of *Hymenolepis nana* were present in the stool. She remained well in spite of treatment, even though repeated stool sample four weeks later still showed presence of the parasite's ova.

## CASE REPORT

A 56-year-old lady, who had renal transplant for nine years presented with two weeks of lower abdominal pain and two days of diarrhea. She had history of recurrent urinary tract infections which resolved with treatment. On examination she was afebrile and clinically stable. Her medications included prednisolone 5 mg once daily, azathioprine 75 mg once daily and sirolimus 3 mg alternating with 2 mg once daily. Laboratory investigations included full blood count which was normal, renal profile with urea of 9.3 mmol/L, sodium of 137 mmol/L, potassium of 3.8 mmol/L and creatinine of 194 µmol/L. Urine culture and sensitivity isolated *Escherichia coli* which produced extended spectrum beta-lactamase enzymes, and she was started on ertapenem 500 mg once daily. She developed diarrhea and stool sample was sent for culture which did not isolate significant bacterial pathogens. *Clostridium difficile* toxin was also not detected. Stool examination for ova and cyst revealed *Hymenolepis nana* (*H.nana*) ova in wet saline and iodine smears. Nonetheless, no relevant history was gathered from the patient which correlated with the acquisition of *H. nana*. The diarrhea was assumed to have resulted from the ertapenem and the antibiotic was changed to meropenem 500 mg twice daily upon consultation. Patient was discharged well after

she completed the course of meropenem. She remained asymptomatic. However, *Hymenolepis nana* ova were continuously present on the repeated stool samples four weeks later.

## DISCUSSION

Intestinal parasitic infection is common and is considered non-critical in a healthy individual. However, intestinal parasitic infection in an immunocompromised patient may become chronic with prolonged diarrhea; hence it is associated with significant morbidity. According to published reports, protozoa such as microsporidia, *Cryptosporidium parvum* and *Giardia lamblia* have been the main agents for parasitic infections in the organ transplant patients. However, helminthic infections are on the rising trend<sup>1</sup> such as strongyloidiasis.

Gupta *et al.* reported a case of hymenolepiasis, associated with diarrhea and dehydration; in a renal transplant patient<sup>2</sup>. Their patient had chronic inflammation of the lamina propria, as evident by sigmoidoscopy biopsy. Rostami *et al.* conducted a cross-sectional study investigating stools of renal transplant recipients in Iran. Out of 706 fecal samples, 32 (4.5%) were positive for parasitic infections, and 2 (0.3%) had ova of *H. nana*<sup>3</sup>.



Fig. 1: Stool preparation showing ova of *H.nana* with hooklets and polar filaments.

This article was accepted: 6 July 2011

Corresponding Author: Syafinaz Amin Nordin, Universiti Putra Malaysia, Medical Microbiology & Parasitology, UPM, Serdang, Selangor 43400, Malaysia  
Email: syafinaz@medic.upm.edu.my; syanbar@msn.com

*Hymenolepis nana* is an intestinal cestode causing tapeworm infection in humans with a worldwide distribution. Up to 75 million people are carriers of *H. nana* globally<sup>4</sup>. As no vector is involved, infection commonly occurs by ingesting eggs of *H.nana* which are present in food, on contaminated fingers or in contaminated drinking water. Similar to other tapeworms, its digestive system is poorly developed therefore; they feed by absorption of nutrients in the host's intestinal lumen. Manifestations of hymenolepiasis include abdominal discomfort, irritability, diarrhea and malabsorption<sup>4</sup>. In this case, the patient had abdominal pain and diarrhea, she was clinically stable and the symptoms resolved without anti-parasitic treatment.

Analysis of stool sample is sufficient to diagnose intestinal parasitic infection. Although egg counts may indicate the worm burden, the infestation does not correlate with the clinical manifestation<sup>5</sup>.

Praziquantel and niclosamide have been used for the treatment of hymenolepiasis. These two drugs have more than 90% efficacy against *H. nana*<sup>4</sup>. Carriers among the family and household members should be treated as well<sup>4</sup>. Based on a previous report in a renal transplant patient, anti-helminthics such as nitazoxanide (500 mg twice daily for three days) and praziquantel (25 mg/kg body weight once daily) have been used to eradicate *H. nana*<sup>2</sup>.

Patient was not treated with anti-parasitic agent with the presumption that the diarrhea was solely due to side-effects of ertapenem. Even though she remained well, presence of *H.nana* ova in the repeated stool samples suggests patient's carrier status and she may transmit the parasite to others. Therefore, patient would have benefited from anti-parasitic treatment to eradicate *H.nana*. In their report, Gupta et al. noted absence of *H.nana* ova in the repeated stool samples after patient was treated with nitazoxanide and praziquantel<sup>2</sup>.

Meanwhile, good sanitation is very important to prevent fecal contamination of food and water especially in crowded areas.

One of the attractions in our culture is the diversity of food easily available at the food vendors and eateries. Food operators and personnel should strictly adhere to hygienic practice when preparing food as they may be an asymptomatic carriers.

#### CONCLUSION

Although parasitic infections such as protozoa, ascariasis and strongyloidiasis are on the rise affecting organ transplant patients, other parasitic infections should not be ignored. Hymenolepiasis should also be considered as well in a case of renal transplant patient presenting with diarrhea. Antihelminthic therapy should be offered according to the severity of clinical manifestations, and in view of the suppressed immunity in an organ recipient, the treatment would be beneficial to eliminate the parasite and to reduce its transmission.

#### ACKNOWLEDGEMENT

We would like to thank Dr Muhammad Nazri bin Aziz (Ministry of Health Malaysia) and Miss Norhanim Kamaruddin (University Putra Malaysia) for helping us in the preparation of this manuscript.

#### REFERENCES

1. Franco-Paredes C, Jacob JT, Hidron A, Rodriguez-Morales AJ, Kuhar D, Caliendo AM. Transplantation and tropical infectious diseases. *Int J Infect Dis* 2010; 14(3): e189-96.
2. Gupta A, Upadhyay BK, Khaira A, Bhowmik D, Tiwari SC. Chronic diarrhea caused by *Hymenolepis nana* in a renal transplant patient. *Clin Exp Nephrol* 2009; 13(2): 185-6.
3. Rostami MN, Keshavarz H, Eskandari E, Kia EB, Razaiean M. Intestinal parasitic infections in renal transplant recipients. *Iranian J Parasitol*. 2007; 2: 16-23.
4. Craig P, Ito A. Intestinal cestodes. *Curr Opin Infect Dis*. 2007;20(5):524-32.
5. Chero JC, Mayuko Saito M, Bustos JA, et al. *Hymenolepis nana* infection: symptoms and response to nitazoxanide in field conditions. *Trans R Soc Trop Med Hyg* 2007; 101: 203-5.