



## **Considering Chronic Giardiasis as a Differential in Presentations of Chronic Gastrointestinal Symptoms in Primary Care**

Dr Mohammed Faiz uddin Anwar.<sup>1</sup>, Dr Khalil Ahmad.<sup>2</sup>

1- Dr Mohammed Faiz uddin Anwar MRCGP (UK), MBBS (Lon), BSc (MedEd)

2- Dr Khalil Ahmad MRCGP (UK), MRCS (Ed), MBBS.

\***Correspondence to:** faiz.anwar@doctors.org.uk.

### **Copyright**

© 2024 **Dr. M F Anwar**. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Received: 22 January 2024

Published: 01 February 2024

**Abstract**

*A 38-year-old male, who had moved to the UK from India 12 months earlier, presented to his primary care health centre with a history of chronic intermittent loose stools and occasional abdominal discomfort. He suffered with bloating, flatulence, reflux and occasional nausea. He complained of tiredness and fatigue but did not report weight loss. Prior to this he had been seen for stress and anxiousness.*

*Examination was unremarkable and his BMI was 27. H pylori stool test was negative. Faecal calprotectin was normal. His bloods showed a Vitamin B12 96, Vit D 17, with normal CBC, LFTs, U&Es and a normal CRP and ESR.*

*Symptoms were attributed to dyspepsia and likely irritable bowel syndrome. He was managed symptomatically with Esomeprazole, Antacid, Mebeverine and as required loperamide.*

*He was followed up 2 months later and reported some symptomatic relief with the treatment but complained of persisting intermittent chronic loose stools. The attending physician ordered stool cultures which were positive for Giardia cysts. He was treated with metronidazole and subsequently reported symptoms to have significantly improved.*

**Introduction**

Giardiasis, caused by the protozoan parasite *Giardia lamblia* (syn. *intestinalis*, *duodenalis*), is considered the commonest opportunistic parasitic infection of the human intestine both in developed and developing countries.(1–5) It can be asymptomatic or, manifest as acute or chronic symptoms.(6) It is easily treatable(7) but chronic giardiasis can be missed as a diagnosis due to its non-specific symptoms resembling other gastrointestinal ailments.(8,9) Thus, making it essential to recognise the different presentations of giardiasis, its transmission and sequelae.

**Epidemiology**

Its prevalence can vary from 2% in developed countries to 30% in developing countries.(10) It can also be influenced by socioeconomic status, age and gender.(1,11,12) In the UK there are approximately 4000

---

laboratory confirmed cases each year with the highest incidence in children aged under 5 years and adults aged 25-44.(1,13) In the US, an estimated 1.2 million cases occur annually but less than 20,000 are reported.(14) In India, the prevalence varies significantly and can be as high as 70% in cases of diarrhoea and asymptomatic cyst passage being as high as 50% in some populations.(15)

### **Life cycle and transmission**

Giardia has a two-stage life cycle and preferably colonizes the proximal small intestine. Cysts, which are generally metabolically inactive and acid resistant, are considered immediately infectious upon excretion in the faeces. When ingested by the host, via contaminated water or food, they pass through the stomach into the small intestine where excystation causes the release of trophozoites. Trophozoites that do not attach to the duodenal or jejunal mucosal surfaces, move onwards to the large intestine where they revert to the infectious cyst form. They are passed back to the environment as infectious cysts excreted in faeces and, in cases of diarrhoea, can also be found as trophozoites in stool.(2,7,16,17)

### **Clinical manifestations**

These can vary from asymptomatic to acute or chronic. It may be asymptomatic in adults and children which cyst shedding lasting 6 months or more. It may impair growth in asymptomatic children without any associated diarrhoea.(17)

In acute manifestations the symptoms present with diarrhoea, malaise, steatorrhea, flatulence, abdominal cramps, nausea and weight loss in majority cases. Vomiting, fever or urticaria may be present in some cases. Symptoms usually develop after an incubation period of 7-14 days and can last between 1-4 weeks.(1,6,17,18)

Chronic giardiasis may develop with or without an acute phase. This can include loose stools (diarrhoea is less likely), malaise, fatigue, flatulence, burping, steatorrhea, malabsorption and borborygmi. These symptoms may be intermittent and over many months.(6,17,19–22) Persistent giardiasis causes duodenal inflammation, affecting epithelial transport and barrier functions, thus contributing to malabsorption. This in turn affects growth and cognitive development in children.(21,23,24)

---

## Chronic giardiasis and irritable bowel syndrome

Chronic giardiasis can present as chronic loose stools, abdominal discomfort and gastrointestinal complaints resembling symptoms of irritable bowel syndrome (IBS). The course of chronic giardiasis and its association with chronic or intermittent loose stools highlights the importance of considering it as a differential diagnosis in presentations of chronic gastrointestinal symptoms. Additionally, IBS, chronic fatigue are associated long-term sequelae of chronic giardiasis amongst others.(21,25,26) These potential consequences of giardiasis are more serious than previously known.

## Conclusion

In conclusion, testing for this parasitic infection should be actively considered by primary care physicians in presentations of chronic gastrointestinal symptoms. It is underreported and underdiagnosed with no pertinent travel history.(27) It was included in the WHO neglected diseases initiative and deserves a comprehensive approach.(28) Accurate diagnosis will help to mitigate the impact on the patients' health, wellbeing and has obvious public health benefits.

## Reference

1. Corrado Minetti, Rachel M Chalmers, Nick J Beeching, Chris Probert, Kenneth Lamden. Giardiasis. *BMJ*. 2016 Oct 27;355:i5369.
2. Faubert G. Immune Response to *Giardia duodenalis*. *Clinical Microbiology Reviews*. 2000 Jan;13(1):35–54.
3. Escobedo AA, Cimerman S. Giardiasis: A Pharmacotherapy Review. *Expert Opinion on Pharmacotherapy*. 2007;
4. Sprong H, Cacciò SM, Giessen JWB v. d., partners. Identification of Zoonotic Genotypes of *Giardia Duodenalis*. *Plos Neglected Tropical Diseases*. 2009;
5. Kalas MA, Alduaij A, Alkhatib AA. Incidental Diagnosis of Duodenal Giardiasis. *Cureus*. 2021;
6. *Giardia Infection: Causes, Symptoms, and Treatment* [Internet]. 2020 [cited 2024 Jan 22]. Available from: <https://patient.info/travel-and-vaccinations/travellers-diarrhoea-leaflet/giardia>
7. Leitsch D. Drug Resistance in the Microaerophilic Parasite *Giardia lamblia*. *Curr Trop Med Rep*. 2015 Sep;2(3):128–35.

8. Minetti C, Lamden K, Durband C, Cheesbrough J, Platt K, Charlett A, et al. Case-Control Study of Risk Factors for Sporadic Giardiasis and Parasite Assemblages in North West England. *Journal of Clinical Microbiology*. 2015;
9. Halliez MCM, Buret AG. Extra-Intestinal and Long Term Consequences of Giardia Duodenalis Infections. *World Journal of Gastroenterology*. 2013;
10. Smith HV, Mank TG. Diagnosis of Human Giardiasis. In: Luján HD, Svärd S, editors. *Giardia: A Model Organism* [Internet]. Vienna: Springer Vienna; 2011. p. 353–77. Available from: [https://doi.org/10.1007/978-3-7091-0198-8\\_22](https://doi.org/10.1007/978-3-7091-0198-8_22)
11. El-Badry AA, Mohammed F, Gawad EA. Predominance of Giardia Intestinalis Assemblage B in Diarrhoeic Children in Sharkia, Egypt. *Parasitologists United Journal*. 2017;
12. Dixon BR. Giardia duodenalis in humans and animals - Transmission and disease. *Res Vet Sci*. 2021 Mar;135:283–9.
13. Horton B, Bridle H, Alexander CL, Katzer F. Giardia Duodenalis in the UK: Current Knowledge of Risk Factors and Public Health Implications. *Parasitology*. 2018;
14. Painter J, Collier S, Gargano JW. Association Between Giardia and Arthritis or Joint Pain in a Large Health Insurance Cohort: Could It Be Reactive Arthritis? *Epidemiology and Infection*. 2016;
15. Laishram S, Kang G, Ajjampur SSR. Giardiasis: A Review on Assemblage Distribution and Epidemiology in India. *Indian Journal of Gastroenterology*. 2012;
16. Rojas-López L, Marques RC, Svärd SG. Giardia duodenalis. *Trends in Parasitology*. 2022 Jul 1;38(7):605–6.
17. Ryan, Edward E, Leder, Karen, Weller, Peter. UpToDate [Internet]. Wolters Kluwer; (Topic 5723 Version 37.0). Available from: <https://www.uptodate.com/contents/giardiasis-epidemiology-clinical-manifestations-and-diagnosis>
18. Lopez-Romero G, Quintero J, Astiazarán-García H, Velazquez C. Host Defences Against Giardia Lamblia. *Parasite Immunology*. 2015;
19. Minetti C, Chalmers RM, Beeching NJ, Probert C, Lamden K. Giardiasis. *BMJ*. 2016 Oct 27;355:i5369.
20. Escobedo AA, Almirall P, Hanevik K, Cimerman S, Rodriguez-Morales AJ, Almanza C, et al. Giardiasis: A Diagnosis That Should Be Considered Regardless of the Setting. *Epidemiology and Infection*. 2018;
21. Robertson LJ, Hanevik K, Escobedo AA, Mørch K, Langeland N. Giardiasis – why do the symptoms sometimes never stop? *Trends in Parasitology*. 2010 Feb 1;26(2):75–82.
22. Zajackowski P, Mazumdar S, Conaty S, Ellis J, Fletcher-Lartey S. *Epidemiology and Associated Risk*

---

Factors of Giardiasis in a Peri-Urban Setting in New South Wales Australia. *Epidemiology and Infection*. 2018;

23. Troeger H, Epple HJ, Schneider T, Wahnschaffe U, Ullrich R, Burchard G, et al. Effect of Chronic Giardia Lamblia Infection on Epithelial Transport and Barrier Function in Human Duodenum. *Gut*. 2007;

24. Ahmad AA, El-Kady AM, Hassan TM. Genotyping of Giardia Duodenalis in Children in Upper Egypt Using Assemblage- Specific PCR Technique. *Plos One*. 2020;

25. Barash N, Maloney JG, Singer SM, Dawson SC. Giardia Alters Commensal Microbial Diversity Throughout the Murine Gut. *Infection and Immunity*. 2017;

26. Wensaas K, Langeland N, Hanevik K, Mørch K, Eide GE, Rørtveit G. Irritable Bowel Syndrome and Chronic Fatigue 3 years After Acute Giardiasis: Historic Cohort Study. *Gut*. 2011;

27. Thomas A, Enemark HL, Poulsen P, Pedersen ML. First Case of Community Acquired Giardiasis in Nuuk, Greenland. *International Journal of Circumpolar Health*. 2021;

28. Savioli L, Smith H, Thompson A. Giardia and Cryptosporidium join the ‘Neglected Diseases Initiative’. *Trends in Parasitology*. 2006 May 1;22(5):203–8.

