

## ORIGINAL ARTICLE

## Clinical Manifestations Of Giardiasis In Iran

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## ABSTRACT

**Context:** Giardiasis has multiple clinical manifestations and its prevalence is relatively high in the Hamadan province of Iran.

**Aims:** This study was conducted to determine the most frequent clinical signs and symptoms of Giardiasis in the Hamadan province of Iran in 2006.

**Setting and Design:** This was a descriptive cross sectional study.

**Methods and Material:** Sixty four patients infected with Giardia were recruited. Anti-gludrin anti-body and TTG tests were done to rule out celiac disease.

**Statistical analysis used:** The data was entered into a computer and chi-square test was used for statistical analysis.

**Results:** Of a total of 64 cases, 26 were females. Giardiasis was most common in cases aged 16-20 years old (20.3%), in males (59.4%) and in patients with the educational status of primary school (31.25%). The most frequent symptom was abdominal pain (42.1%).

**Conclusion:** We found that the clinical manifestations of Giardiasis are similar to that of other gastrointestinal diseases such as celiac. So Giardiasis should be considered as the most probable diagnosis in patients with gastrointestinal problems.

**Key Words:** Giardia lamblia, Infection, Iran

**Key Message:** Giardiasis should be considered as the most probable diagnosis in patients with gastrointestinal problems.

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nausea and vomiting and steatorrhea [3]. Giardia lamblia is considered to be an important cause of recurrent abdominal pain in children [4].

Based on unpublished data from the Hamadan province, it was observed that most of the Giardiasis cases presented with bloating and malaise. Because of its wide spectrum clinical manifestations and the relatively high prevalence of this infection in the Hamadan province of Iran, this study was conducted to determine the most frequent clinical signs and symptoms of Giardiasis in the Hamadan province of Iran.

### Materials and Methods

This study was carried out at the Laboratory of Hamadan, Public health center, a referral laboratory center in Hamadan in 2006. In a period of 4 months, 320 patients with suspected intestinal infections were referred to the laboratory from various health care facilities, out-patient clinics and private offices

### Introduction

Giardia lamblia is a flagellated protozoan parasite which is one of the two most common gastrointestinal parasites in the world that is mostly common in developing than in developed countries [1]. The prevalence of Giardiasis has been reported 20-30% of the population in developing countries [2]. It can result in a wide spectrum of clinical manifestations, from asymptomatic to acute or chronic diarrhoea, with mal-absorption syndrome and weight loss, malaise, bloating,

in the study area. All stool samples were processed using the formaldehyde-ether sedimentation method. In this study, a primary infection with giardia was evaluated and other parasite infections, with or without giardiasis (secondary infection), were excluded.

To distinguish Giardiasis from other gastrointestinal diseases such as celiac, enteropathogenic E-coli (EPEC) and viral infection, TTG antibody and stool culture for EPCE were done.

The socio-demographic data of the patients (e.g. age, sex, level of education) were obtained, documented in the check list and were analyzed using the Statistical Program for Social Sciences (SPSS). Differences were evaluated using the chi-square test. P values of less than 0.05 were considered as significant.

## Result

64 patients fulfilled the criteria. Of the population studied, the overall prevalence rate of Giardia lamblia was 20% (64 out of 320). The male to female ratio was 2:1. The majority of patients were in the range of 16-20 years old (20.3%), and with low educational status (31.25%).

The most common symptom was abdominal pain (59.26% in males and 40.74% in females). Others symptoms included: bloating, dizziness, lack of energy, diarrhoea and vomiting, [Table/Fig 1]. There was no significant difference between the symptoms of the disease in various age groups. The prevalence of bloating and abdominal pain was significantly higher in males than in females [Table/Fig 1]. No significant relationships were seen between other symptoms and sex groups.

(Table/Fig 1) Clinical manifestation of Giardia infection in Hamedan province, Iran (2006)

| Clinical manifestation | Male (Percent) | Female (percent) | Total  |         | P values |
|------------------------|----------------|------------------|--------|---------|----------|
|                        |                |                  | Number | Percent |          |
| Diarrhea               | 33.3           | 66.7             | 6      | 9.4     | 0.95     |
| Bloating               | 66.7           | 33.3             | 15     | 23.4    | 0.003    |
| Malaise                | 66.7           | 33.3             | 3      | 4.7     | 0.23     |
| Nausea & Vomiting      | 75             | 25               | 4      | 6.3     | 0.11     |
| Anorexia               | 75             | 25               | 4      | 6.3     | 0.11     |
| Abdominal cramp        | 100            | 0                | 1      | 1.6     | 0.34     |
| Constipation           | 0              | 100              | 2      | 3.1     | 0.43     |
| Weight loss            | 50             | 50               | 2      | 3.1     | 0.57     |
| Abdominal pain         | 59.36          | 40.74            | 27     | 42.1    | 0.001    |

## Discussion

The prevalence and epidemiological features of Giardiasis vary in different parts of Iran (%5-23%) [5]. In this study, we found that the prevalence of Giardiasis is 21.3% among a population in Hamadan, Iran, that was similar to that found in the studies by Davami and Naeini in Arak and Shah-ray, Iran [5], [6]. It was lower than that found in the studies by Taherkhani and Moshfe in Hamadan and Yasooj, Iran [7],[8]. Socio-economical, geographical, hygienic, cultural, and nutritional factors may affect the prevalence of Giardiasis in various part of Iran. In addition, differences in the prevalence of Giardiasis may be as a result of differences in sample size, population and the methodology used for collecting the data. The prevalence of Giardia infection was higher in males than in females, which was similar to that found in previous studies in Iran, while in some studies, it was found to be higher in females than in males [9].

The majority of patients in this study were young adult (16-20 years old), while in developed countries, the outbreak of this disease was observed in children.

The most common symptoms observed in the patients were abdominal pain and bloating, which were different to that found in previous studies conducted on children in Hamadan, in which diarrhoea and vomiting were the prominent manifestations [7]. This difference may be due to the exclusion of patients with concomitant E.coli infection and celiac disease from the present study. Differences in virulence potency and host immune system response may contribute to the manifestation in individual patients.

The short duration of the study and the cohort of patients should be considered as limitations of the study. So, complementary large scale studies are suggested.

In conclusion, prevention through continuous healthcare education and improving the awareness about food and water contamination, avoidance of swimming in unclean water and access to clean drinking water are the most important considerations for preventing giardia infection.

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