

## Prevalence of Intestinal Parasitic Infections among Suspected Referred Patients to Reference Laboratory of Ilam, West Iran

Abbas Maleki, Sobhan Ghafourian, Nourkhoda Sadeghifard,  
Mahnaz Shafiean, Ali Hematian, Mitra Khosravi and Reza Mohebi\*

Clinical Microbiology Research Center, Ilam University of Medical Sciences, Ilam, Iran.

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The aim of the present study was to estimate the prevalence of intestinal parasitic infections among suspected referred patients to Reference laboratory of Ilam in the west of Iran during the period March 2010 to April 2010. samples were collected from 1600 suspected referred patients to Reference laboratory of Ilam in the west of Iran during the period March 2010 to April 2010. The stool samples were examined for intestinal parasites by direct microscopic. The results indicate that intestinal parasitic infections among patients in the study area are mainly water-borne. Intestinal parasites were detected by direct smear in 154 of 1600 (9.6%) suspected referred patients to the laboratory. At least one intestinal parasite was found in stool samples from 124 patients, two parasites in 27, and mixed infections with 3 parasites were seen in stool samples of 3 patients. The parasites were *Giardia intestinalis* 77 (50%), *Entamoeba histolytica/E. dispar* 19 (12.3%), *Entamoeba coli* 36 (23.3%). The prevalence of *E. histolytica* found in the present study of 1.8% was based on microscopy positive samples only. Presumably, the number of *E. histolytica* positive cases would be higher if all samples were tested by Molecular. The ratio of *E. histolytica* to *E. dispar* found in this study of 1:3.5 is higher than the estimated global ratio of 1:10.

**Key Words:** Intestinal parasitic infections; *E. histolytica*; Iran.

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Intestinal protozoa still continue to be major problems in health worldwide, especially in the tropical and sub-tropical regions.<sup>1</sup>

It is estimated that some 3.5 billion people are affected, and that 450 million are ill as a result of these infection. These infections are regarded as serious public health problem.<sup>2</sup> Common intestinal parasites such as *Blastocystis hominis* (*B. hominis*) and *Giardia lamblia* (*G. lamblia*) are still health challenges of economically developed and developing countries. The prevalence of

Blastocystosis in humans has been reported to be higher in developing countries (30-50%) than in developed countries (1.5-10%) and that *B. hominis* is the most common parasite in stool specimens in a variety of settings.<sup>3</sup> *Enterobius vermicularis* (47.0%), *Trichuris trichiura* (18.8%) and *Taenia saginata* (17.2%) were the most frequent intestinal parasites found in China.<sup>4</sup> In resource-poor countries of the world, *G. lamblia* is one of the first enteric pathogens to infect infants with peak prevalence of 15-30% occurring in children younger than year 7-10.

Clinical observations, unpublished reports and hospital records in Ilam in the west of Iran have indicated that intestinal parasitic infections are widely prevalent. Unfortunately, there is a lack of community-based studies which provide information on the epidemiology of these

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\* To whom all correspondence should be addressed.  
E-mail: Mohebi\_reza61@yahoo.com

infections in this municipality. These data could be useful in understanding the patterns of infections and planning effective strategies for intestinal parasitic infections control.

The aim of the present study was to estimate the prevalence of intestinal parasitic infections among suspected referred patients to Reference laboratory of Ilam in the west of Iran during the period March 2010 to April 2010.

## MATERIAL AND METHODS

### Samples Collection

Samples were collected from 1600 suspected referred patients to Reference laboratory of Ilam in the west of Iran during the period March 2010 to April 2010. The stool samples were examined for intestinal parasites by direct microscopic.

### Intestinal parasitic examination

The stool specimens (0.5-1.5 g) were collected in labeled plastic vials without preservatives and immediately (less than 2 hr) samples were subjected to macroscopic examination, to check the consistency and to point out the presence of blood, mucus, or adult helminth parasites.

## RESULTS & DISCUSSION

The results indicate that intestinal parasitic infections among patients in the study area are mainly water-borne. Intestinal parasites were detected by direct smear in 154 of 1600 (9.6%) suspected referred patients to the laboratory. At least one intestinal parasite was found in stool samples from 124 patients, two parasites in 27, and mixed infections with 3 parasites were seen in stool samples of 3 patients. The parasites were *Giardia intestinalis* 77 (50%), *Entamoeba histolytica*/*E. dispar* 19 (12.3%), *Entamoeba coli* 36 (23.3%).

Intestinal parasitosis represents a relevant clinical problem, especially in developing countries, where they are responsible for morbidity and mortality in adults and children and many epidemiological data are available for these areas.<sup>5</sup> The prevalence in the communities may be altered because of changes in social behavior and life styles during years. Different epidemiological studies of such infections will provide better

understanding of the health status of these countries. In recent years, several researches have been conducted in different parts of Iran to reveal the status of prevalence of intestinal parasitic infections. All these studies indicated that there is a sharp decline in the prevalence of intestinal parasites compared to those studies of previous 3 decades.<sup>6,7,8</sup>

In our study, the cumulative positive infection rate for all species was 1600 (9.6%), and like other researches in Iran, *G. intestinalis* (50%) was the most common species among protozoa. *E. coli* was the next common intestinal protozoa among the study population. *G. intestinalis* and *E. coli* can be transmitted orally by drinking infected water and both are environmental contaminants of the water supply. The water supply is really an important risk factor, for giardiasis, and several large outbreaks of giardiasis have resulted from contamination of municipal water supplies with human waste.<sup>9</sup> In Mexico City, up to 18% of acute diarrhea and dysentery in patients requiring hospitalization were found to be associated with *G. intestinalis*, as well as 10% with *E. histolytica* and 7% with *Blastocystis hominis*.

## CONCLUSION

The prevalence of *E. histolytica* found in the present study of 1.8% was based on microscopy positive samples only. Presumably, the number of *E. histolytica* positive cases would be higher if all samples were tested by Molecular. The ratio of *E. histolytica* to *E. dispar* found in this study of 1:3.5 is higher than the estimated global ratio of 1:10.

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