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The frequency of intestinal parasites in the samples of Alzahra laboratory of Isfahan (2017-2019)

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Abstract

Parasitic diseases are one of health problems in developing countries. In this study, the frequency of intestinal parasites in Alzahra laboratory of Isfahan province will be evaluated. This study was as descriptive and cross-sectional. A questionnaire was used in it. Finally, the collected data were entered into SPSS version 22 and then were analyzed. Of the 23874 fecal samples studied, 422 samples (1.7%) were positive and 23452 (98.3%) were negative. The highest number of referrals was related to summer. *Giardia* was the most common parasitic infection in spring, summer and autumn and *Blastocystis hominis* was the most common parasitic infection in winter. The infection of intestinal parasites should be considered and take more effective steps to increase the level of public and environmental health.

Keywords: Intestinal Parasites, Isfahan Province, Frequency.

INTRODUCTION

Due to the high prevalence of parasitic infections in Iran, transmission ways and methods to prevent their spread are very important [1,2]. Examining the level of parasitic infection in different parts of the country can be a great help in determining the type of infection and common parasites, comparing the amount of infection with the past and how they are transmitted and thus provide ways to prevent infection [3,4].

The city of Isfahan in Iran is exposed to pollution due to special geographical condition and other factors such as hot and dry climate, the presence of different ethnicities, agricultural status, type of nutrition of people and the abundance of suitable carriers [5].

Another contributing factor to parasitic diseases is the use of animal and human fertilizers for agriculture, which despite the replacement of chemical fertilizers, this type of fertilizer is still used in rural areas of Isfahan [6,7].

Therefore, the present study was conducted with the aim of identification of the factors contributing to the prevalence of parasitic infections, ways to prevent these infections, common parasites and assess the health of the people of Isfahan.

MATERIALS AND METHODS

The present study was descriptive and was performed using the data available in the laboratory of Alzahra Hospital in Isfahan. This research was as census and was done during the September 2017 to September 2019. This research was result of general physician thesis. The ethics committee of Shahid Sadoughi University of Medical Sciences of Yazd, Iran approved this study.

Recorded data of fecal samples of referring patients were entered in a pre-prepared questionnaire. In the mentioned questionnaire, information about each patient including age, sex, sampling season, positive or negative sample, and type of parasite in positive cases were recorded.

Patients referred by doctors were given single-use plastic bottles for sampling. Most samples were collected in the laboratory and some patients brought the sample to the laboratory after preparation at home.

A drop of physiological serum and a drop of Logul were located in the center of two separate slides, stirred with a wooden stick and a saturated feces stick in a drop of physiological serum and then Lugol in a

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circular motion and finally in 10 and 40 magnifications were investigated under a microscope. Also, if necessary, for some samples, flotation method was used for better diagnosis.

The collected data were entered into SPSS v.22 software and then analyzed.

sychiatry, infectious diseases and ENT) and major (internal medicine, pediatrics, gynecology, obstetrics and surgery).

RESULTS

Of the 23874 samples, 422 samples (1.7%) were positive and 23452 (98.3%) were negative. Of the all cases, 12159 cases (50.9%) were males and 11715 cases (49.1%) were females. Out of all positive samples 218 cases (51.65%) were males and 204 cases (48.35%) were females. There was no significant relationship between parasitic infection and sex.

The highest number of referrals was related to summer and the lowest number was related to winter (Table 1).

Also, the most positive cases were in the summer and the least positive cases were in the winter. There was a significant relationship between parasite frequency and season.

Giardia was the most common parasitic infection in spring, summer and autumn and *Blastocystis hominis* was the most common in winter.

Most cases of infection were in the age range of 0 to 10 years (118 cases or 27.9%) and the lowest level of infection was related to the age range of more than 90 years with no positive cases. Results showed a significant relationship between parasitic infection and age.

Table 1: Comparison of the frequency distribution of intestinal parasites based on season

Season		Sample		Total
		Positive	Negative	
Spring	N	108	4624	4732
	%	2.3	97.7	100
Summer	N	165	8376	8541
	%	1.9	98.1	100
Autumn	N	98	6080	6178
	%	1.6	98.4	100
Winter	N	51	4372	4423
	%	1.15	98.85	100
Total	N	422	23452	28874
	%	1.7	98.3	100

DISCUSSION

The current study showed a significant relationship between parasite frequency and season. The highest number of individuals was related to summer. Giardia was the most common parasite in three seasons.

A study in 2016 in Gashky, west of Iran revealed that the highest frequency of the parasitic infections was associated with Blastocystis and Giardia. Male sex was only issue significantly related to the occurrence of these infections in people [8].

Another study in Mazandaran, northern Iran demonstrated that Giardia lamblia was the most frequently found protozoan parasitic infection [9].

A study among age group of less than 10 years old in rural and urban parts of Hamadan, Iran demonstrated that Blastocystis hominis was the most commonly distinguished parasite, followed by Giardia [10].

Another study in Karaj, Tehran Province, Iran exhibited that more infections belonged to Giardia (Giardia intestinalis), and almost 3% samples had this parasite [11].

CONCLUSION

By comparing present study and similar studies that have been done in the past it can be concluded that in general, the prevalence of intestinal parasites was low but given that there are still a number of infected cases, infection with intestinal parasites should be considered as a key health problem.

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Conflict of Interest

None declared.

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