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Distrubition of intestinal parasites in patients admitted to clinical microbiology department*

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Objective A total of 4392 specimens were taken from patients applied Clinical Microbiology Laboratory and examined for intestinal parasites.

Methods At least one or more types of parasites were detected in 1015 (23.1 %) samples.

Results In 895 samples (20.4 %), only protozoon parasites were noticed. The number of samples which contained only helminth were 92 (2.1 %).

Conclusion Twenty eight samples (0.9 %) had both helminth and protozoon parasites. taenia spp. (0.9 %) and Entamoeba coli (12.6 %) were the most frequently detected helminth and protozoon parasites, respectively.

Key word Intestinal parasites.

Introduction

While parasites continue to live off their hosts, depending upon the site where parasites are localized, frequently disturbances in the physiological state of the hosts are observed (1,2). Parasitic diseases are most commonly encountered in the third world countries. The rate of parasitic infections in our region is probably the highest in the country. A succesful public health campaign against parasitism requires a detailed information about the species of parasites present in a region. The incidance rates for different species and other aspects of edipemiology for a particular parasite species should be known for succesfull anti parasite efforts. Thus, aim of study was to investigate the predominant parasite species in our region. To investigate the possible changes in parasite species reported earlier was also among the purposes of the study.

Material and Method

A total of 4392 fecal samples were collected from patients applied clinical microbiology laboratory. The sample collection and laboratory analysis were made on the same day. Three different methods of analyses: macroscobic, direct and sedimantation methods, were utilized for fecal samples. For direct method, 1 gr of fecal sample was resuspended in to drops of saline and lugol solution on a glass slide. After complete resuspension, the samples were examined at x100 and x400 magnification under a microscope. For sedimantation method, 1 gr of fecal sample was resuspended in 5 ml deionized water in a centrifuge tube. Later, the suspension was spinned 2500 rpm for on min and the pellet was washed once in deionized water. After the washing, the pelet was transferred onto a slide and examined at x100 and x400 magnification under a microscope. During the microscopic examination whether the fecal samples contained blood or mucus was investigated. The fecal samples were collected in water and light proof sterile plastic containers.

Results

In this study, 4392 fecal samples submitted to Clinic Microbiology Laboratory of Fırat University Medical School were examined for eggs of intestinal parasites and for protozoon cysts. The study was performed between January 1992, and December 1993. In 12.9 % of the samples, only one parasite species was observed, and 5.6 % of samples had more than one parasite species. In parasite positive samples, only protozoon positive, only helminth positive and both protozoon and helminth positive were at the rate of 20.1%, 2.1% and 0.6 %, respectively. Among the helminths present in the samples, were Taenia spp. (0.9 %), Hymenolepis nana and Enterobius vermicularis (0.6 %), Ascaris lumbricoides (0.5 %), Dicrocoelium dendriticum (0.1 %) and Trichuris trichiura (0.1 %). Protozoon species found in the samples were Entamoeba coli (12.6 %), Giardia intestinalis (7.8 %), Amoeboid trophosoids (2.2 %), Entamoeba histolytica (1.3 %), Chilomastix mesnili (1.2 %), Iodamoeba butschlii (1.1 %) (Table 1).

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Table 1. The results of fecal examinations for Helminth eggs andpProtozoon cysts.

Parasites	No	%
Parasite Positive	1015	23.1
Only One Parasite	769	17.5
More than One Parasite	246	5.6
Only Protozoon	895	20.4
Only Helminth	92	2.1
Protozoon+Helminth	28	0.6
Entemoeba coli	554	12.6
Giardia intestinalis	342	7.8
Amoeboid trophozoids	97	2.2
Entamoeba histolytica	56	1.3
Chilomastix mesnili	52	1.2
Iodamoeba butschlii	47	1.1
Trichomonas hominis	44	1.0
Taenia spp.	32	0.9
Hymenolepis nana	28	0.6
Enterobius vermicularis	25	0.6
Ascaris lumbricoides	22	0.5
Dicrocoelium dendriticum	5	0.1
Trichuris trichiura	4	0.1

Discussion

Several reports on the prevalance parasites, and on the parasite species have been published in this country. Accordingly, there is significant variation in the distribution of parasite species among different parts of the country (3,4,5,6).

Özbilgin et. al noticed intestinal parasites in 48.5 % of the patients of with gastrointestinal complaints (7). In Diyarbakır, İzmir, Trabzon Malatya and Bursa, these rates were reported to be 16.33, 12.2, 25.4, 27.3 and 4.9 %, respectively (5,6,7,8,9,10,11).

In this study, overall parasitism was noticed in 23.1 % of samples. The most prevalent protozoon was Entamoeba coli and this was followed by Giardia intestinalis. Among the helminths, the commonest was Taenia spp.

Our results indicate that intestinal protozoons are more prevalent than intestinal helminths in our region. In an earlier survey, we found parasitosis in 25.8 % of samples. Thus, parasitism seems to persist in our region in recent years.

References

1. Koneman E.W., Allen S.D., Janda W. M., Screberger P.C., Winn W.C.: Diagnostic Microbiology.USA, 880-946, 1993.
2. Merdivenci A.: Klinik Parazitoloji. Beta Basım Yay., İstanbul, 114, 1984.
3. Çolak H.: Türkiye'de barsak parazitlerinin bölgesel yaygınlığı. Mikrobiol Bült. 5: 1, 1979.
4. Sayı G.: Son yirmi yılda barsak parazitleri ile ilgili olarak yapılan yayınların incelenmesi. T. Parazitol Derg. XVI (3-4): 161-189, 1992.
5. Durmaz B., Durmaz R.: İnönü Üniversitesi Tıp Fakültesi Mikrobiyoloji Laboratuvarına gelen 523 hastada barsak parazitlerinin dağılımı. T. Parazitol Derg. XV (1): 61-65, 1991.
6. Gönül G.: Laboratuvarımızda incelenen 51.331 dışkı örneğinde barsak parazitleri dağılımının sıklığında yıllara göre görülen değişiklikler. T. Parazitol Derg., XV (2): 75-84, 1991.
7. Özbilgin A., Atambay M., Sak A.: Kars'ta barsak parazitleri üzerine bir araştırma. T.Parazitol Derg., 17 (3-4): 43-47, 1993.
8. Duran G., Mete Ö.: Bölgemizde görülen barsak parazitlerinin epidemiyolojik olarak değerlendirilmesi. T. Parazitol. Derg., 17 (2) :35-41, 1993.
9. Şimşekcan D. ve ark.: İzmir ilinde resmi ve özel kuruluşlara ait 327 mutfak personelinde barsak parazitlerinin araştırılması. T. Parazitol Derg. XV (3-4): 67-74, 1991.
10. Ökten A. ve ark.: Trabzon yöresinde parazitoz. T. Parazitol Derg., XVI (2): 569-574, 1992.
11. Ay S., Yılmaz M., Aşçı Z., Barlas H.H., Yücel A.Y.: Fırat Üniversitesi Tıp Fakültesi Mikrobiyoloji Laboratuvarına başvuran hastalarda barsak parazitlerinin dağılımı. T. Parazitol Derg., XV (3-4): 88-91, 1991.

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