Research concerning intestinal parasitosis in infant population discovered in two clinic laboratories from Oradea (Romania)

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Abstract. Considering the research made and the data offered by the specialists in parasitology from Oradea's no.1 Polyclinic and Children's Hospital, we have established that children from 1 to 18 years old have been found infected with 7 species of human parasites. *Giardia lamblia, Blastocystis hominis, Ascaris lumbricoides, Oxyurus vermicularis, Trichurus trichiura, Hymenolepis nana, Hymenolepis diminuta.*

Introduction

Parasitology is an experimental science included in the medical sciences. There are many diseases caused by animal or vegetal parasites. To fight these diseases it is necessary to know in a morphological and biological way the parasites that caused them, insisting mostly on the way they get into the host's body. Because of the amplitude of the phenomenon, intestinal parasite diseases are a public health problem especially at children. That's why we intend to evaluate this phenomenon in two of Oradea's clinical laboratories.

Most of the intestinal parasite diseases are seen like simple diseases. The implications are the individual discomfort in the sanitarium economy. Infantile parasite diseases are as many and as serious as they are in the case of animals. Studying parasites biology in nature and in the hosts' bodies, the biologists can participate in solving the epidemiological and epizootological problems, contributing this way to the scientific organization of preventing and fighting parasite diseases. Some parasite diseases even become frequently mass spreading diseases (for example diseases caused by Giardia and Oxyurus, and others).

Matherials and Methods

The data used in this research have been taken from the primary records (registers) of the Children's Hospital and the Oradea no.1 Polyclinic. As a research method we have used two big parasitological test methods (Nitzulescu & Corjescu 1976), (Gherman 1990) and also mathematic methods (Mureşan 1983). During the five years study (2000-2004), in the two laboratories 29.025 parasitological tests have been made and 11.419 of them turned out to be positive concerning different intestinal parasites.

RESULTS

Considering the research made and the data offered by the specialists in parasitology from Oradea's no.1 Polyclinic and Children's Hospital, we have established that children from 1 to 18 years old have been found infected with 7 species of human parasites (table 1).

Analyzing different years of study, the frequency of infantile parasite diseases has been represented on the Figure 1-5.

Table no.1 Parasite species established in the two locations

PARASITE SPECIES	DISEASE
Phylum Sarcomastigophora	
Class Flagellata	
-Giardia lamblia	-giardiasis
Order Amoebida	
-Blastocystis hominis	-blastocystosis
Phylum Nemathelminthes	
Class Nematoda	
-Ascaris lumbricoides	-ascariasis
-Oxyurus vermicularis	-enterobiasis
-Trichurus trichiura	-trichuriasis
Phylum Plathelminthes	
Class Cestoda	
-Hymenolepis nana	-himenolepiasis
-Hymenolepis diminuta	- rat himenolepiasis



Figure No.1 The frequency of infantile parasite diseases in 2000



Figure No.2 The frequency of infantile parasite diseases in 2001



Figure No.3 The frequency of infantile parasite diseases in 2002



Figure No.4 The frequency of infantile parasite diseases in 2003



Figure No.5 The frequency of infantile parasite diseases in 2004

The upper figures show that *Giardia lamblia* is the most frequent infantile infection, all that because children don't consider important enough the hygienic rules.

Table no. 2 displays the first 10 most frequent parasites revealed in the five years of study. The table below shows that very often a child can be infected with more than one parasite. The most frequent infections are *Giardia lamblia* and *Blastocystis hominis*.

<i>Tuble 110.2</i> Tulusites neguency (2000-2004	Table No. 2	Parasites	frequency	(2000-2004))
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Nr. crt.	Parasites	Nr. of cases
1	Giardia lamblia	5913
2	Blastocystis hominis	1303
3	G-B	1214
4	Oxyurus vermicularis	920
5	Trichocephalus hominis	582
6	G-T	379
7	G-OX	363
8	ASC	169
9	ASC-T	99
10	ASC-G	87

Age classes	Year	Total
0 – 2 years	2000	403
	2001	470
	2002	316
	2003	284
	2004	271
Total		1744
	2000	1173
	2001	1188
3-6 years	2002	752
	2003	549
	2004	467
Total		4129
	2000	836
	2001	753
7 – 10 years	2002	495
-	2003	305
	2004	324
Total		2713
	2000	532
11 – 14 years	2001	543
	2002	392
	2003	254
	2004	194
Total		1915
-	2000	246
	2001	284
15 - 18 years	2002	186
-	2003	135
	1000	
	2004	84

Table No. 3 The number of children infected, divided by ages (2000-2004)

Table no. 3 shows the number of cases in the years of studies. It is obvious once again that preschool age classes are the most frequent ages exposed to infections.

Table No. 4 Seasonal distribution of the cases in Oradea (2000-2004)

Month	Absolute number	%
January	1256	11.00
February	1139	9.98
March	1094	9.58
April	801	7.02
May	778	6.81
June	638	5.59
July	823	7.21
August	1049	9.19
September	1244	10.90
October	1174	10.28
November	982	8.60
December	438	3.84
Total	11419	100.00

About the seasonal distribution we know that most of the cases appear during summer and autumn, the preschool and little school ages are the mostly exposed, but also during winter, because of the parasites' long incubation period.





CONVENTIONAL SIGNS

- G Giardia lamblia
- B Blastocystis hominis O – Oxyurus vermicularis
- T Trichocephalus hominis
- A Ascaris lumbricoides
- B-G Blastocystis hominis and Giardia lamblia
- G-T Giardia lamblia and Trichocephalus hominis
- B-T Blastocystis hominis and Trichocephalus hominis
- B-OX Blastocystis hominis and Oxyurus vermicularis
- G-OX Giardia lamblia and Oxyurus vermicularis

T-OX - Trichocephalus hominis and Oxyurus vermicularis

ASC- T - Ascaris lumbricoides and Trichocephalus hominis

ASC-G - Ascaris lumbricoides and Giardia lamblia

G-B-T - Giardia lamblia, Blastocystis hominis and Trichocephalus hominis G-B-OX - Giardia lamblia, Blastocystis hominis and Oxyurus vermicularis

Conclusions

Considering the studied data and the researches made we have discovered seven diseases caused by parasites at children from the Children's Hospital and the no.1 Polyclinic in Oradea. Analyzing the data we can conclude:

-children between 2-5 years old are most frequently exposed to infections;

-the less spread parasites diseases are himenolepiasis, rat himenolepiasis and the most frequent is ascariasis because this last one is caused by the contamination of water and food and by neglecting the rules of food hygiene. Another conclusion refers to the high frequency of giardiasis, discovered with children but also with grown-ups and it is considered a public health problem because of the high incidence and also because of their clinical and economical implications.

Because the main cause of the infections seem to be the man, the first measure imposed is diagnosing and treating the ill ones, then maintaining hands hygiene and following food and water hygiene rules.

About the knowledge and the following of the prophylaxis measures of the upper parasite diseases we consider that the first lessons should be taught to children from early kindergarten. With these lessons and parental advice, in time they can have a well developed hygiene education. Concerning health education, where the epidemic source is, an action concerning the whole population should be initiated.

Once with the growing of the children, the diseases are less frequent and this makes them ignore the hygiene rules. This tendency often comes along with less health education manifested by parents. This education could get more efficient if it would be developed consequent, by merrier adults (teachers, doctors, parents) and not as rare as just when the biology class requires it.

Let's hope that these inefficiencies will be stopped once the level of the human education, civilization and health will rise.

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