CLINICAL AND EPIDEMIOLOGYCAL SURVEY OF GIARDIASIS IN THE CLINICAL HOSPITAL OF INFECTIOUS DISEASES, ORADEA, BIHOR

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Abstract

Giardiasis is an intestinal parasitisys(parasite zoonozis), that affects humans and other vertebrates, produced by the flagellated protozoa Giardia spp. In the current document, the objective has been to analyze, epidemiologycaly, clinically and paraclinically, the giardiasis cases registered in the Infectious Diseases Clinic of Oradea,Gastroenterology Ward, Bihor, from january to december 2010. Studies have shown the following, occurred on patients: prevalence of Giardiasis has had the value of 0.95%, with monthly limits between 0.0-17.8%. Infection has had an increased spread on children between 5 to 14 years old (13.3%), on youths between 15 to 24 years old (28.9%) and on adults between 35 to 44 years old (16.6%). 37.8% of the positive diagnosed patients come from rural environment and 62.2% from urban environment. From a clinical point of view, the most frequent internation signs and symptoms have been: diffuse abdominal pain (97.77%), asthenia (95.55%), vomiting (68.88%), diarrhea (82.22%) and erythematous skin eruption (73.33%). Patients have also complained, in a few isolated cases, of fever, dry cough, dysphagia, fatigue, food intolerance, paresis, scleral subicterus, hypercromatic urine, acromatical feces, myalgia.

KEY WORDS*:* giardiosis, giardia, protozoa, parasite

INTRODUCTION

Giardiasis, produced by *Giardia spp.,* forms a parasitosis of great epidemiological and clinical importance due to it's high prevalence and pathogenicity amongst animals as well as amongst humans, especially within infant population. Giardiasis is a digestive zoonosis, produced by Giardia type protozoan, most commonly involved species being *Giardia duodenalis*.

The main epidemio-zoonotic problems, raised by the presence of parasitic zoonosis are those reffering to observation, prevention and limitations of it. Although in the past 10 years the number of giardiasis cases across world and Romania have diminished and succes has been recorded in medical assistance of the patients, a high number of giardiasis cases still remain, involving high risk and important costs in humans cases as well as in animal cases. Prevalence of the infraclinical forms of *Giardia spp* infection on humans and animals, difficulties in establishing a parasitic diagnosis, but also a great variety of ways this infection can manifest, justify the studies and their results which will lead to an optimum diagnosis,

treatment and prophilaxis strategy. The association of these elements has formed a starting point in the study of aspects regarding the influence of parasitic infection with *Giardia spp* on adult and infant population.

MATERIAL AND METHODS

Research in progress towards giardiosis have focused the following objectives:

→ Epidemiologycal research regarding the evolution of giardiosis on children and adults interned at the Infectious diseases Clinic of Oradea,

→ Clinical and paraclinical research regarding evolution of giardiosis on children and adults interned in the Infectious Diseases Clinic of Oradea.

Epidemiologycal, clinical and paraclinical research towards the evolution of giardiosis have been done between January 2010 and December 2010.

Epidemiologycal, clinical and paraclinical aspects have been tracked on patients diagnosed with giardiosis interned in the Infectious Diseases Clinic of Oradea,.

In the upper mentioned period, laboratory diagnosis in giardiosis on children and adults from the upper mentioned institution has been released within the Faculty of Veterinary Medicine of Cluj Napoca, Discipline Parasitology and also within the laboratory of the Infectious Diseases Clinic of Oradea. The examination has been conducted using only one feces probe for each child and adult. Examination has been realised using 5 consecutive croppings, using two coproscopic methods:

→ The enrichment with sodium chloride solution by flotation method (Willis method)

→ The modiffied Blagg method (Suteu and colab., 1987)

Although the modiffied Blagg method is considered as a specific method in giardiosis diagnostication, we have appealed to the execution of the Willis method with the purpose of receiveing a more complex image upon the possible endoparasites present at the study subjects.

Incidence of giardiosis as well as PR on age, sex and source environment categories has been tracked. On giardiosis infected patients, reasons of internment and symptomatology given by the parasital infection have been pursued, as well as treatment.

Tracked age categories have been: <1 year, 1-4 years, 5-14 years, 15-24 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years, 65-74 years, 75-84 years and >85 years .

From a paraclinical point of view, usual analysis samples have been harvested (hemoleucogram, VSH, glycemia, PCR etc.) and ward specific samples (transaminase, total bilirubin, urine summary, SNF and coproparasitologycal examination).

RESULTS AND DISCUTIONS

During the epidemilogycal investigations executed at the Infectious Diseases Clinic of Oradea, Gastrology Ward, a total number of 4740 patients have been interned. During their internment, besides specialty clinical examinations, patients have done coproparasitologycal examiations which have allowed diagnose of giardiosis and its grown incidence. Out of the 4740 interned patients between 1 January 2010 and 31 Decembre 2010, 45 have been diagnosed with giardiosis, this meaning a incidence of 0.95%. Monthly PR of giardiosis varies between 0.0 % and 17.8% with the highest value recorded in april (*Table 1*).

Table 1.

Incindence of giardiosis on patients interned at the Infectious Diseases Clinic of Oradea

MONTH	NR. OF GIARDIOSIS CASES	%
January	3	6.7%
February	5	11.1%
March	5	11.1%
April	6	13.3%
May	3	6.7%
June	8	**17.8%**
July	3	6.7%
August	0	0%
Septembre	1	2.2%
October	6	13.3%
November	1	2.2%
Decembre	4	8.9%
TOTAL	**45**	**0.95%**

In what regards the incidence of giardiosis depending on the source environment, a high percent has been observed on patients coming from urban environment, comparative to those who come from rural environment: respectively 17 cases have been recorded on patients from rural environment (37.8%) and 28 cases on patients from urban environment (62.2%). Incidence of giardiosis depending on age categories has shown high variations, a direct proportional relation being observed comparative to the patient's age, maximum incidence being recorded within the following categories: 5-14 years – 13.3%, 15-24 years – 28.9%, 25-34 and 35-44 years, respectively 15.6%. In the rest of the age categories incidence has been under 10%, the lowest being 0.0% on the >85 years category (*Table2*).

Table 2.

Incidence of giardiosis depending on age, on patients interned at the Infectious Diseases Clinic of Oradea

AGE CATEGORIES	NR. OF GIARDIOSIS CASES	%
< 1 year	1	2.2%
1-4 years	2	4.4%
5-14 years	6	13.3%
15-24 years	13	28.9%
25-34 years	7	15.6%
35-44 years	7	15.6%
45-54 years	3	6.7%
55-64 years	1	2.2%
65-74 years	2	4.4%
75-84 years	3	6.7%
>85 years	0	0%
TOTAL	**45**	**0.95%**

Regarding the eventual correlation between giardiosis and clinical diagnose set on internment or subsequently, it has been observed a frequent association of giardiosis with acute colecistitis, enterocholitis, reactive alergodermia, acte gastritis and hipocalcaemia has been observed in adult cases.

Symptomatology shown by patients diagnosed with giardiosis has varied, obtained results being presented lower (*Table 3).* A high percent has been recorded for abdominal pain, diarrheic feces, skin eruption and astenia. Paraclinical examinations done on giardiosis affected patients have shown pathological modiffications of eosinophils, VSH, TGO, TGP, glycemia (*Table 4).*

Table 3.

Symptomatology of patients interned in the Infectious Diseases of Oradea, Bihor

SYMPTOMATOLOGY	NUMBER OF CASES	PERCENT
Diffuse abdominal pain	44	**97.77%**
Nausea	40	**88.88%**
Vomit	31	**68.88%**
Cephaleea	25	55.55%
Loss of apetite	10	22.22%
Astenia	43	**95.55%**
Dizziness	11	24.44%
Diarrheic feces	37	**82.22%**
Erythematous skin eruption	33	**73.33%**
Fever	15	33.33%
Dry cough	2	4.44%
Disphagya	5	11.11%
Fatigability	4	8.88%
Alimentary intolerance	7	15.55%
Parestesia	2	4.44%
Scleral subicterus	4	8.88%
Hyperchromatic urine	4	8.88%
Achromatic urine	1	2.22%
Mialgya	7	15.55%
TOTAL	45	100%

Table 4.

Laboratory examinations of patients interned at the Infectious Diseases Clinic of Oradea, Bihor

PARACLINICAL EXAMINATIONS (Pathologycal results)	NORMAL VALUES	NR.OF PATIENTS	PERCENT
Positive coproparasitologycal examination	Negative	43 Positive	**100%**
Eosinophils↑	1-3%	33	**73.33%**
VSH	6-8mm/h 10-16mm/h	15	33.33%
Glycemia	70-120 µg %	5	11.11%
Positive PCR	Positive	6	13.33%
TGO	15-45 u/l	8	17.77%
TGP	22-49 u/l	7	15.55%
Total bilirubine	0,5-1mg %	5	11.11%
Modiffied urine summary	Negativ	2 Positive	4.44%
Positive SNF	Negativ	4 Positive	8.88%
	Total of patients	45	100%

Coproparasitologycal examinations performed on patients with giardiosis have shown the presence of parasital infestations associated with *Trichocephalus trichura* on 6 patients and with *Hymenolepidiidae* and *Enterobius Vermicularis* on one patient (*Table 5*).

Table 5.

Parasitic infections associated to the *Giardia duodenalis* infection on patients interned at the Infectious Diseases Clinic of Oradea, Bihor

DETECTED PARASITES ON COPROPARASITOLOGYCAL EXAMINATION	NUMBER OF CASES	PERCENT
Giardia Lamblia	45	100%
Trichocephalus trichura	6	13.33%
Hymenolepidiidae Enterobius Vermicularis	1	2.22%
Total	45	100%

Human lambliazis with universal spreading is caracterised through epidemics with variable surface in some countries, between 1 and 20 % of the population (Dancinger, 1975).

In countries with continous development, including our country, the disease has a relatively high prevalence on children who frequent diverse collectivities (nursery, kindergarten, schools) facilitating the transmission of the disease to family members (Radulescu, 1992).

Prevalence of giardiosis in the world estimated in 1965 to 7.2% has a increased variability, depending on many agents, such as: age (maximum incidence is in the 1-3 years age category, capable of reaching 85%); source environment (most frequent in collectivities – 5.4 to 78%, comparative to family environment – 1.5 to 21 %), social and economical level, geographical area (Gillon, 1984).

According to Steriu (2003), *Giardia duodenalis* infects all the age categories, prevalence in the world varies between 2 and 25 %, higher in urban collectivities and especially on children in the first year of life.

In our country different percents are circulated, up to 60% on children, but the experience of the Parasitology Laboratory of Cantacuzino Institute shows net inferior numbers, under 50% (Vasile-Bugarin and Vasiliu, 2003).

CONCLUSIONS

During the epidemiological, clinical and paraclinical research performed within the Infectious Diseases Clinic of Oradea, Gastroenterology Ward, we have obtained the following results:

- ⇒ On 4741 interned patiens from the Infectious Diseases Clinic of Oradea, Gastroenterology Ward, the incidence of giardiosis has been 0.95% with monthly limits between 0.0% and 17.8%; the infection has had a high incidence on children between 5 and 14 years (13.3%), youngsters between 15 and 24 years (28.9%) and adults between 25 and 34 years and 35 and 44 years (15.6%); 62.2% of the positive patients come from urban environment and 37.8% from ruralenvironment;
- ⇒ Clinical and paraclinical investigations performed on patients interned in the Infectious Diseases Clinic of Oradea, Gastroenterology Ward, have shown as follows:
  - ⇘ Patients have shown frequently on internement: diffuze abdominal pain (97.77%), astenia (95.55%), diarrheic feces (82.22%), nausea (88.88), vomit (68.88%) and erythematous skin eruption (73.33%);
  - ⇘ Main raised sanguin hematologycal and biochemical parameters in giardiosis infected patients have been: eosinophils, VSH, transaminase (TGO, TGP), glycemia and total bilirubin;
- ⇒ Giardiosis has evolved frequently associated with other digestive parasitoses: on hospitalised patients – with: trichocephalosis, cestodosis(Hymenolepididae) and Enterobius vermicularis.

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