

CLINICAL, PARACLINICAL AND EPIDEMIOLOGICAL RESEARCH ON GIARDIOSIS AFFECTED HUMANS

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Abstract

Giardiasis is an intestinal parasitosis (parasite zoonosis), that affects humans and other vertebrates, produced by the flagellated protozoa Giardia spp. In the current document, the objective has been to analyze, epidemiologically, clinically and paraclinically, the giardiasis cases registered in the Infectious Diseases Clinic of Oradea, Gastroenterology Ward, Bihor, from January to December 2007. Studies have shown the following, occurred on patients: prevalence of Giardiasis has had the value of 10.44%, with monthly limits between 2.73-21.66%. Infection has had an increased spread on children between 5 to 10 years old (11.79%), on youths between 15 to 20 years old (14.28%) and on adults between 65 to 75 years old (16.66%). 38.55% of the positive diagnosed patients come from rural environment and 61.44% from urban environment. From a clinical point of view, the following items have been traced: infection reasons and the parasitic infection's symptomatology. The most frequent infection signs and symptoms have been: diffuse abdominal pain (87.95%), asthenia (48.19%), vomiting (37.40%), diarrhea (67.50%) and erythematous skin eruption (39.80%). Patients have also complained, in a few isolated cases, of fever, dry cough, dysphagia, fatigue, food intolerance, paresis, scleral icterus, hyperchromatic urine, acromatous feces, myalgia. From a paraclinical point of view, probes have been collected for the usual analysis (hemoleucogram, VSH, glycemia, C-reactive protein, etc) and for clinically specific analysis (transaminase, total bilirubin, urine summary, SNF and coproparasitological exam). The positive diagnosis of giardiasis has been based on the coproparasitological exam and eosinophilia. In the context of the association of giardiasis with other internal problems shown by patients, lab exams have shown the next modified values: eosinophilia over 3% (62.65%), high VSH (30.12%), high transaminase: TGO over 45 U/L (9.64%), TGP over 49 U/L (8.43%). Coproparasitological examinations done on giardiasis patients have also shown the presence of Trichocephalus trichura on 6 patients and Enterobius Vermicularis on 1 patient.

Keywords: zoonosis, giardiasis, lamblia, giardia, protozoa, parasite

INTRODUCTION, PURPOSE OF STUDY

Research in progress towards giardiasis have focused the following objectives:

- Epidemiological research regarding the evolution of giardiasis on children and adults interned at the Infectious diseases Clinic of Oradea, Gastroenterology Ward
- Clinical and paraclinical research regarding evolution of giardiasis on children and adults interned in the Infectious Diseases Clinic of Oradea, Gastroenterology Ward

MATERIAL AND METHOD

Epidemiological, clinical and paraclinical research towards the evolution of giardiasis have been done between January 2007 and December 2007.

Epidemiological, clinical and paraclinical aspects have been tracked on patients diagnosed with giardiasis interned in the Infectious Diseases Clinic of Oradea, Gastroenterology Ward.

In the upper mentioned period, laboratory diagnosis in giardiasis 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 cappings, using two coproscopic methods:

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

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

Although the modified Blagg method is considered as a specific method in giardiasis diagnostics, we have appealed to the execution of the Willis method with the purpose of receiving a more complex image upon the possible endoparasites present at the study subjects.

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

Tracked age categories have been: 0-5 years, 5-10 years, 10-15 years, 15-25 years, 25-35 years, 35-45 years, 45-55 years, 55-65 years and 65-75 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 coproparasitological examination).

RESULTS AND DISCUSSIONS

During the epidemiological investigations executed at the Infectious Diseases Clinic of Oradea, Gastrology Ward, a total number of 795 patients have been interned. During their internment, besides specialty clinical examinations, patients have done coproparasitological examinations which have allowed diagnose of giardiasis and its grown incidence. Out of the 795 interned patients between 1 January 2007 and 31 December 2007, 83 have been diagnosed with giardiasis, this meaning a incidence of 10.44%. Monthly PR of giardiasis varies between 2.73 % and 21.66% with the highest value recorded in may(*Table 1*).

Table 1

Incidence of giardiosis on patients interned at the Infectious Diseases Clinic of Oradea ,
Gastroenterology Ward

MONTH	NR. OF INTERNED PATIENTS	NR. OF GIARDIOSIS CASES	%
January	81	3	3.70%
February	65	6	9.23%
March	73	2	2.73%
April	49	10	20.40%
May	60	13	21.66%
June	77	4	5.19%
July	32	0	0%
August	45	5	11.11%
Septembre	97	18	18.55%
October	53	7	13.20%
November	102	11	10.78%
Decembre	61	4	6.55%
TOTAL	795	83	10.44%

In what regards the incidence of giardiosis depending on the source environment, a high percent has been observed on patients coming from urban environment, caomparative to those who come from rural environment: respectively 32 cases have been recorded on patients from rural environment(38.55%) and 51 cases on patients from urban environment (61.44%). 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: 5-10 years – 11.79%, 15-20 years – 14.28%, 45-55 and 65-75 years, respectively 16.66%. In the rest of the age categories incidence has been under 10%, the lowest being 2.38% on the 20-25 years category.

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 2*).

Table 2

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

SYMPTOMATOLOGY	NUMBER OF CASES	PERCENT
Diffuse abdominal pain	73	87.95%
Nausea	40	48.19%
Vomit	31	37.40%
Cephaleea	25	30.12%
Loss of apetite	10	12.05%
Astenia	80	96.38%
Dizziness	11	13.25%
Diarrheic feces	56	67.50%
Erythematous skin eruption	33	39.80%
Fever	15	18.07%
Dry cough	2	2.40%
Disphagya	5	6.02%
Fatigability	4	4.81%
Alimentary intolerance	7	8.43%
Parestesia	2	2.40%
Scleral subicterus	4	4.81%
Hyperchromatic urine	4	4.81%
Achromatic urine	1	1.20%
Mialgya	7	8.40%
TOTAL	83	100%

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 modifications of eosinophils, VSH, TGO, TGP, glycemia(*Table 3*).

Table 3

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

PARACLINICAL EXAMINATIONS (Pathological results)	NORMAL VALUES	NR.OF PATIENTS	PERCENT
Positive coproparasitological examination	Negative	83 Positive	100%
Eosinophils↑	1-3%	52	62.65%
VSH	6-8mm/h 10-16mm/h	25	30.12%
Glycemia	70-120 µg %	5	6.02%
Positive PCR	Positive	6	7.23%
TGO	15-45 u/l	8	9.64%
TGP	22-49 u/l	7	8.43%
Total bilirubine	0,5-1mg %	5	6.02%
Modiffied urine summary	Negativ	2 Positive	2.41%
Positive SNF	Negativ	4 Positive	4.82%
Total of patients		83	100%

Coproparasitological examinations performed on patients with giardiosis have shown the presence of parasital infestations associated with *Trichocephalus trichura* on 6 patients and with *Hymenolepididae* and *Enterobius Vermicularis* on one patient (*Table 4*).

Table 4

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

DETECTED PARASITES ON COPROPARASITOLOGYCAL EXAMINATION	NUMBER OF CASES	PERCENT
<i>Giardia Lamblia</i>	83	100%
<i>Trichocephalus trichura</i>	6	7.23%
<i>Hymenolepididae</i> <i>Enterobius Vermicularis</i>	1	1.20%
Total	83	100%

Human lambliazis with universal spreading is characterised 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* 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 795 interned patients from the Infectious Diseases Clinic of Oradea, Gastroenterology Ward, the incidence of giardiasis has been 10.44% with monthly limits between 2.73% and 21.66%; the infection has had a high incidence on children between 5 and 10 years (11.79%), youngsters between 15 and 20 years (14.28%) and adults between 45 and 55 years and 65 and 75 years (16.66%); 61.44% of the positive patients come from rural environment and 38.55% from urban environment; on 47.61% of the patients infected with *Giardia Lamblia* it has been observed an association to acute colecistitis, on 23.80% with alergodermia, on 23.80% with acute gastritis and on 11.% with hypocalcaemia.

⇒ 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 internment: diffuse abdominal pain (87.97%), astenia (48.19%), diarrheic feces (67.5%), nausea and vomit (37.4%) and erythematous skin eruption (39.40%)

⌘ Main raised sanguin hematological and biochemical parameters in giardiasis infected patients have been: eosinophils, VSH, transaminase (TGO, TGP), glycemia and total bilirubin

⇒ Giardiasis has evolved frequently associated with other digestive parasitoses: on hospitalised patients – with: trichocephalosis, cestodosis(*Hymenolepididae*) and *Enterobius vermicularis*

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