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Influence of Age and Education of Patients on Prevalence *Giardia lamblia* in Human

HASAN PEŠTALIĆ[1], MARIJA MILUTINOVIĆ[1],
ZORAN KULIŠIĆ[2], NEVENKA ALEKSIĆ-BAKRAČ[2]
AND IVAN PAVLOVIĆ[3]

[1] *Institute for Medical Research, Dr. Subotića 4, P. O. Box 721,*
[2] *Faculty of Veterinary Medicine, Bulevar JNA 18,*
[3] *Scientific Veterinary Institute of Serbia, Vojvode Toze 14, 11000 Belgrade, Yugoslavia.*

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ABSTRACT

The influence of age on prevalence of giardiasis was investigated. Total of 8,460 feces samples were examined. The patients were at the age between 5 and 85. Giardiasis was detected in 134 persons, the higher number of infected being at the age of 41-45 years (20.15%). At the age between 21 and 40 years, as well as between 46 and 70 the prevalence of giardiasis was similar, and was estimated as moderate. In all the other age groups there were significantly less infected persons.

In families whose one member was positive to giardiasis, the positive results were also recorded among other members of family.

The obtained results indicate that giardiasis is the most common intestinal protozoan parasites of human in Serbia.

INTRODUCTION

Among many causes of the diseases of the parasitic etiology an important place is occupied by the infections caused by the infections caused by *Giardia lamblia* (Mason and Petterson 1987; Nikolic et al. 1990; Boreham et al. 1981). Giardiasis, as far as people are concerned, is primarily connected with children, although there have also been presented some cases of epidemics with the grown-ups. The disease is spread all over the world but it is more characteristic of

warmer regions and of zones with moderate climate.

Apart from the man, giardiasis have been registered as facultative pathogens with many kinds of animals and researches have confirmed that giardiasis originating from people can also be infectious with animals. This is the reason why since 1979 giardiasis has found its place on the list of parasitic zoonoses of the World Health Organization (Navin 1985; Nasilowska and Dzbenski 1991; Mason and Patterson 1987; Coskun 1991).

During researches carried out in the period 1990-1997, there was born the idea that it would be very useful to examine the members of families of patients with whom giardiasis was ascertained because these flagellates can be easily transferred from one member of the household to another.

MATERIALS AND METHODS

The examination materials were mostly liquid spontaneous feces brought by patients. The examinations were carried out by means of the following: fresh feces there were at once made four preparations; two native ones and two Quincel's agents. Native preparations were stained by means of the trichromatic method after Whealtey and by means of the method after Quincel, as well as by MIFC method and Lugol's solution, after which they were microscoped.

RESULTS AND DISCUSSION

Total of 8,460 samples were examined, thereby giardiasis was ascertained with 134 patients. Having at our disposal anamnestic data, we wanted to see how much the percentage of infections was influenced by the life age of patients (Fig. 1). As shown in Fig. 1, life age of patients was between 5 and 85 years, the largest number of patients being at the age of 41-45 years (20.15%), while at the age between 21 and 40 years as well as between 46 and 70 it was more or less the same as the peaks for the ages between 36-40 and 51-55 years.

Education was one more element which we considered with our patients, thereby there were formed four categories of examines (Fig. 2). The obtained results showed that the largest number of the positive patients (75%) was of the low educational level, and the smallest number (5%) was of the university educational level. These data have epidemiological importance because of the well known fact that giardiasis is spread by feco-oral way, in which case hygiene and culture of living have an important role (Meyer 1985; Nikolic 1989; Pestalic 1991).

As far our examiners are concerned, the great majority of them had gastrointestinal disorders, while more than half of them also suffered from the diarrhea syndrome. Patients were of the age between 21 and 65 years, i.e. in the

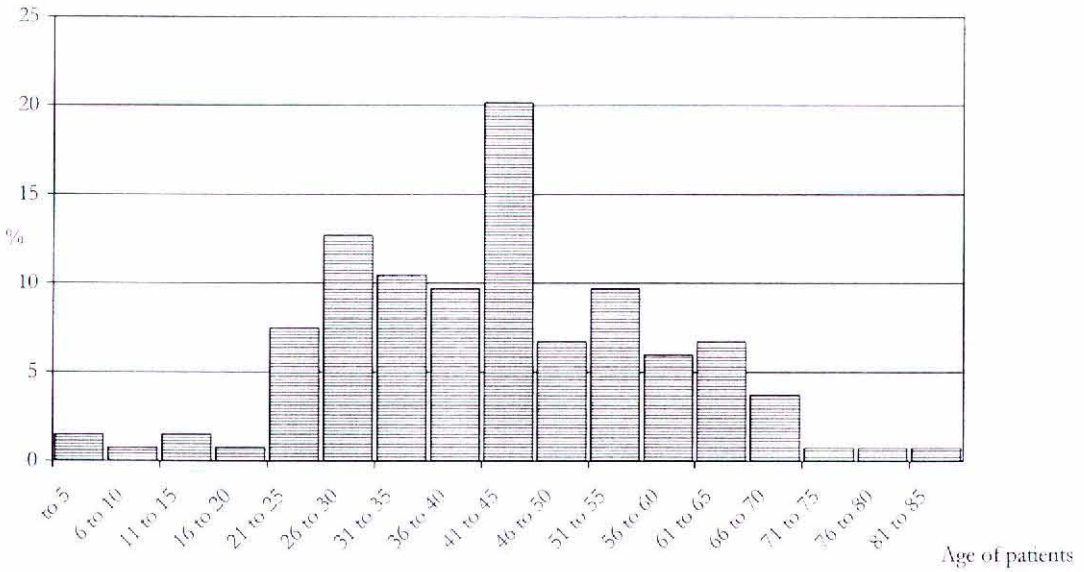

Fig. 1 Prevalence of giardiasis in patients of various ages.

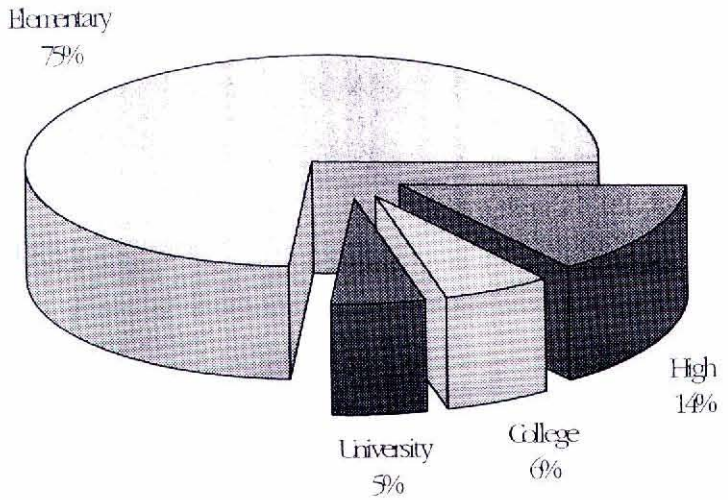

Fig. 2 Prevalence of giardiasis in patients of various education levels.

age of the greatest physical end intellectual activities. According to the research results it could be said that infections were influenced by the educational level of the examiners (Fig. 2). These facts made us ask patients to bring their family members' feces whose data they gave us. We required feces to be spontaneous. Out of 134 patients 104 (65.8%) accepted our suggestion, so that we got 294 samples of feces, all of which were examined in the afore-described way. Positive results were in 23% of families whose one member was positive to giardiasis. Our researches have shown that the majority of infected patients were children (62.5%), followed grandchildren (16.6%), brothers and sisters (12.5%) and final spouses (8.3%). This points out the importance of giardiasis as a family infection and the necessity for the examinations of families in which one of members is afflicted by this disease (Black et al. 1977).

The obtained results indicate that giardiasis is the most common intestinal protozoan parasites of human in Serbia (Petrovic 1980; Nikolic et al. 1990; Petrovic 1990; Nikolic et al. 1998).

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