Relationship Between Giardiasis Infection and Respiratory Allergy in Children

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Background and Aim: Giardiasis is a common parasitic disease in the world. The cause of this infection is a single-cell flagellated parasite called *Giardia lamblia*. Giardiasis infection is more important in children due to severe complications and dangerous consequences, including steatorrhea, severe weight loss, and neurological and mental lesions compared to adults. There is evidence that allergy symptoms, especially respiratory allergies, develop in patients with giardiasis infection. Because of the importance of this parasitic disease in children and adolescents, we aimed to investigate the relationship between respiratory allergy and giardiasis infection in children.

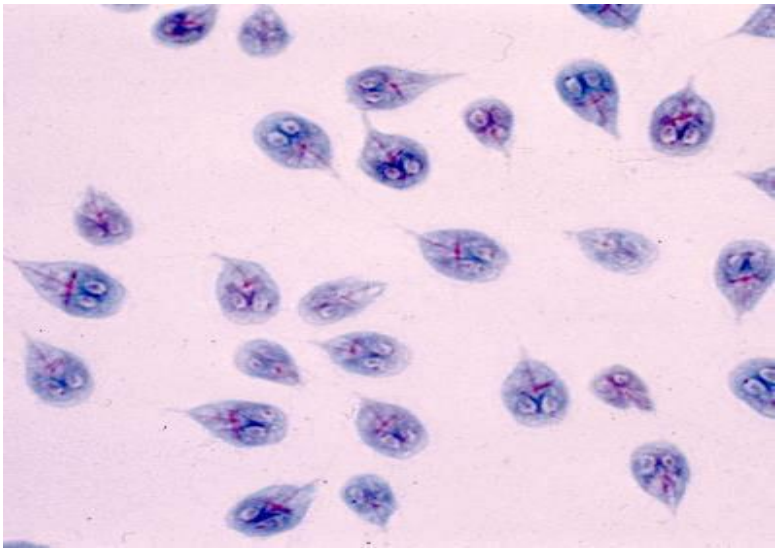

Fig. 1. Trophozoites of *Giardia lamblia* (9-21 micron).

Fig. 2. Respiratory allergy in children

Methods: 50 children under the age of 14 years with respiratory allergy (asthma, allergic rhinitis, coughing and chronic sneezing) were selected as case group and 50 children under the age of 14 years without respiratory allergy were selected as control group. These individuals were selected among the children visiting the clinics of the pediatricians. Serum immunoglobulin IgE values were measured by the ELISA method (Germany-made Biotech Model B325). The percentage of eosinophil in the blood was tested by CBC. Diagnosis of giardiasis infection was also done through the search for the fecal antigen of *Giardia lamblia*. All the tests were carried out in a Medical Diagnostic Laboratory, and SPSS Version 21 software was used for statistical analysis.

Results: Fifty-six percent of children in both case and control groups were boys and 44 percent were girls. The highest age group of children studied in both case and control groups was 3 to 12 years (78 percent). Six percent of children with respiratory allergy (case group) and 4 percent of children without respiratory allergy (control group) were infected by *Giardia lamblia*. The average percentage of eosinophil in children with giardiasis was 6.09% and in non-affected children was 1.42%, respectively. The average IgE values were 107.43 and 88.36 IU/ml in giardiasis infected and non-infected children, respectively.

Conclusion: According to the results of this study, it is concluded that there is a clear and significant statistical relationship between giardiasis infection and respiratory allergy in children (Sig.= 0.012, $p<0.05$).

Keywords: Giardiasis; Giardia lamblia; Respiratory allergies; Children; Immunoglobulin IgE