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Influence of age in *Dientamoeba fragilis* infection

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Background: *Dientamoeba fragilis* is a pathogenic protozoan of the human gastrointestinal tract with a worldwide distribution. This study describes the influence of age in *D. fragilis* infection.

Material/methods: We perform a descriptive study in all patients diagnosed with *D. fragilis* infection. Each patient's clinical history was collected. Blood tests and biochemical analyses were performed for all patients. Three stool samples per patient were concentrated stained with lugol and screened under a light microscope with a low magnification. Nucleic acids were extracted from stool samples with QIAamp DNA Stool Mini Kit and genome of *D. fragilis* was detected using a PCR assay. A pinworm test was performed in stool samples of all patients. Parasitological controls were performed at 4 and 8 weeks after the end of treatment in all patients. All patients were treated with metronidazole 500 mg/8 h or paramomicin 250 mg/8 h. Patients with *E. vermicularis* co-infection and/or an *E. vermicularis*-positive case in the family were treated with mebendazole 100 mg/12 h for 3 days. Patients were classified into three groups: younger than 14 years (Group 1), between 15-59 years (Group 2) and older than 60 (Group 3).

Results: 105 patients (52.4% male, mean age 34[20]) were studied and treated. Twenty six patients (24.8%) were younger than 14 years, 64 (61%) between 15-59 years and 15 (14.3%) older than 60 years. Most of patients were from Spain (59%), followed by those who came from Equatorial Guinea

(12.4%), Colombia (8.6%) Ecuador (5.6%) Pakistan (3.8%) and other countries (10.6%). Patients from group 3 lived more frequently in rural areas (53.3%, $p = 0.072$, OR 2.667 [0.879-8.092]). Forty-seven patients (44.8%) were asymptomatic. The most frequent symptoms reported by the remaining patients were abdominal pain (31.4%) and diarrhea (13.3%). Diarrhea was significantly more frequent in patients from group 2 ($p = 0.036$ OR 4,5 [0.952-21,275]) and was absent in patients from group 1. The mean level of eosinophilia was $1.361 \pm 1.676 \times 10^9$ cells/l. Twenty-nine patients had hypereosinophilia in the blood. Eighty-seven patients were treated with metronidazole and 18 with paramomicin. No differences between both groups were observed. A co-infection with *E. vermicularis* was found in 32 (30.5%) patients (18 (69.2%) from group 1, 11 (17.2%) from group 2 and 3 (20.0%) from group 3) ($p = 0.0001$ OR 10,446 [3.792-28.781]). Ninety (85.7%) patients cured.

Conclusions: Such as has been described by several authors, coinfection with *D. fragilis* and *E. vermicularis* is frequent in children less than 14 years old. Nevertheless, this study indicates that coinfection with both pathogens is uncommon in adult patients, including elderly. *D. fragilis* infection cause diarrhea more frequently in adult patients between 15-59 years. *D. fragilis* infection is more frequent in patients older than 60 years who live in rural areas.