

# Differential characteristics of *Dientamoeba fragilis* infection in immigrant and non-immigrant populations

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## BACKGROUND

- Dientamoeba fragilis* is a protozoan parasite found in the gastrointestinal tract of humans initially considered it as a non-pathogenic commensal.

## OBJECTIVE

- The aim of this study was to describe the differential characteristics of DF infection in immigrants and non-immigrants patients attended in a Tropical Medicine Unit.

## METHODS

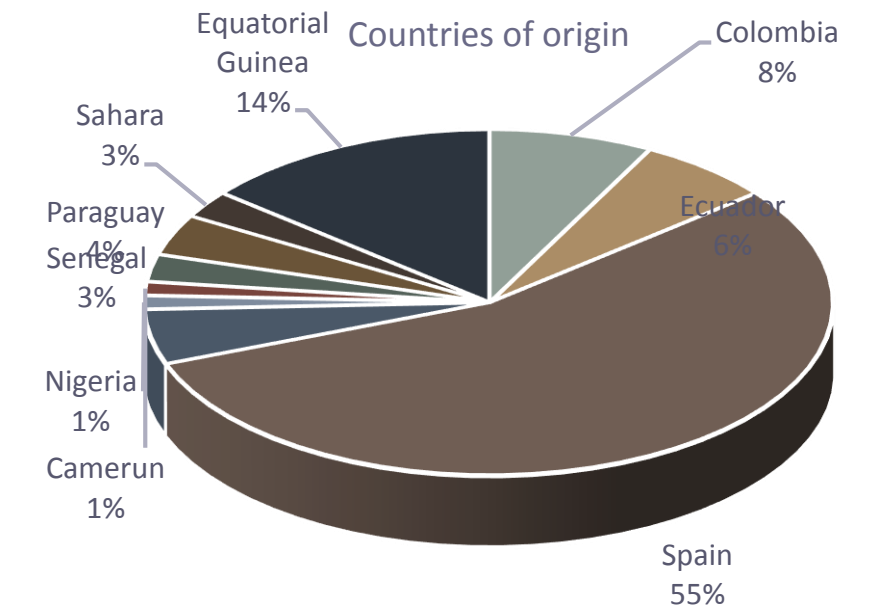
- During the years 2012-2014 we conducted a prospective screening program of *D. fragilis* infection in all patients attending in Tropical Medicine Unit of Hospital Universitario Central de Asturias.
- Combined examination of three concentrated stool samples, and polymerase chain reaction (PCR) was used as screening. We considered that infection exists if the microscopic visualization of larvae in stool sample and/or the PCR was positive.
- Clinical information was collected on any patient who was diagnosed with *D. fragilis* infection.
- Eosinophilia in blood test was studied.
- All positive patients were treated with metronidazole for ten days. Follow-up stool samples were collected 2–4 weeks after treatment and underwent microscopy and PCR.
- All data was entered into a database and analyzed using SPSS 18.0 software package.

## RESULTS

- D. fragilis* was detected in 78 patients, (average age: 32[19] years, 44% immigrants, 62% male). Twenty-one (27.2%) patients were children under 14 years old.
- D. fragilis* was more frequently detected in non-immigrant group ( $p= 0,024$ , OR 3,437[1,107-10,669]). The mean time in Spain of immigrant group was 1722[1688] days.
- All patients were diagnosed by PCR

Parameter	Immigrants N=43	Non-immigrants N= 35	P value	OR
<b>Demographic Characteristics</b>				
Sex (M/F)	23/20	17/18	0.419	-
Age	32[22]	33[16]	0.004	-
<b>Epidemiological Characteristics</b>				
Animals	8/35	4/31	0.219	-
Rural/Urban	23/20	7/28	0.002	4.6[1.6-12.7]
Coinfection by <i>E. vermicularis</i> (yes/no)	24/16	4/26	0.0001	9.75[2.85-33.29]
Family with <i>E.vermicularis</i>	24/11	7/18	0.002	5.6[1.81-17.32]
<b>Symptoms (Yes/No)</b>				
Abdominal pain	12/31	12/23	0.358	-
Diarrhea	5/38	3/32	0.478	-
Pruritus	1/42	0/33	0.566	-
Asymptomatic Yes/No	19/24	14/21	0.444	-
Eosinophilia	615[1242]	329[438]	0.108	-
Cure (Yes/no)	35/8	34/1	0.031	0.12 [0.015-1.085]

No statistical differences in sex, presence of animals on both groups were found. Most of the infected patients presented with diarrhea and abdominal pain. The rest of the patients were asymptomatic without differences between both groups. *E. vermicularis* infection was more frequent in non-immigrant group (24 vs 4,  $p= 0.0001$ , OR 9,375 [2,739-32,091])



Regarding other parasites, 28 (36.4%) of patients had a coinfection with *Enterobius vermicularis*, 7 (9 %) with *Strongyloides stercoralis*, 4 (5.2%) by *Blastocystis hominis*, and 2 (2.6%) by *Entamoeba spp.*.

All patients were treated with metronidazole, 68 cases of them (34 in the immigrant group and 35 in the non-immigrant group) were cured and the rest have microbiological relapses, which were significantly higher in immigrants patients (8 vs 1,  $p=0,034$ , OR 0.146, [0.017-1,234])

## CONCLUSIONES

- The presence of *D. fragilis* is more frequent in immigrant population than in non-immigrant patients and its associated with a high presence of *E. vermicularis* coinfection.

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