Histopath
Specialist Pathologists

Dientamoeba fragilis

Introduction

Dientamoeba fragilis is classified as an ameboflagellate, closely related to *Histomonas* and *trichomonas* spp. The organism infects humans and some other animals. Knowledge of the life cycle is incomplete. Spread between humans is most likely faecal-oral. There is no known cyst stage.
Some reports suggest an association with the transmission of *Enterobius vermicularis* (Pinworm).

The organism is thought to infect the mucosal crypts of the large intestine. It is not invasive and does not cause cellular damage. It causes disease in humans regardless of immune status.

Symptoms of infection

Reported symptoms vary between patients. The major symptoms are abdominal pain and diarrhoea.
Other symptoms include:

Anorexia
Weight Loss
Nausea / vomiting
Bloating
Flatulence
Alternating constipation / diarrhoea
Fatigue, irritability

Morphology

The organism is characterised as having one to two nuclei. The nuclear chromatin is usually fragmented into three to five granules. The cytoplasm is usually vacuolated and may contain ingested debris.
Organisms with a single nucleus may be very difficult to distinguish from *Endolimax nana* and *Entamoeba hartmanii*, both of which are currently considered non pathogenic.

Diagnosis

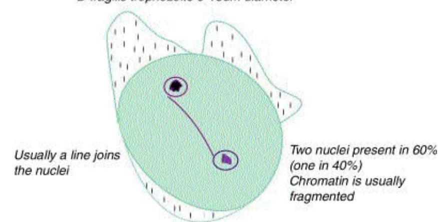
The diagnosis is based on the identification of the organism in faeces. The specimens must be fixed immediately on collection, in order to preserve the integrity of the organism. If not fixed, the organism will degenerate within 1-2 hours making identification impossible.
Like all testing for parasites, the greater the number of collections, the greater the sensitivity of the testing.
At least three stool collections are recommended, preferably on different days. The stool specimens should be placed immediately into fixative and kept at room temperature until tested.

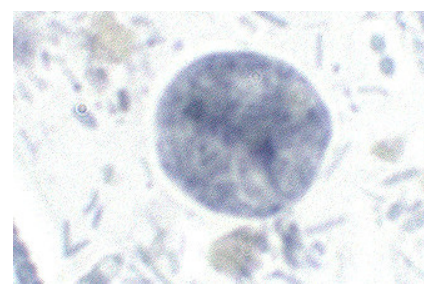
Treatment

Treatment is recommended in all cases.

Tetracycline & Metronidazole are first line treatment agents, however resistant organisms are now present in Australia. Re-testing after treatment is recommended (2-3 weeks after course).

Alternative agents reported to clear the organism are:
Iodoquinol and paromomycin. Some gastroenterologists are using various combination treatments, including Diloxamide Furoate.





Key Points

* The organism is a pathogen.

* A minimum of three specimens should be submitted

* The organism has no cyst stage and the organism will not be seen on a 'wet preparation'. Examination of a permanent stained smear is mandatory.

* Trophozoites may be recovered from formed stools

References

www.cdc.gov/epo/mmwr/preview/mmwrhtml/00016167.htm

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