Blastocystis infection: to treat or not to treat?

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Symptomatic patients with *Blastocystis hominis* should be given a trial of antibiotic therapy if no other cause can be found for their symptoms.

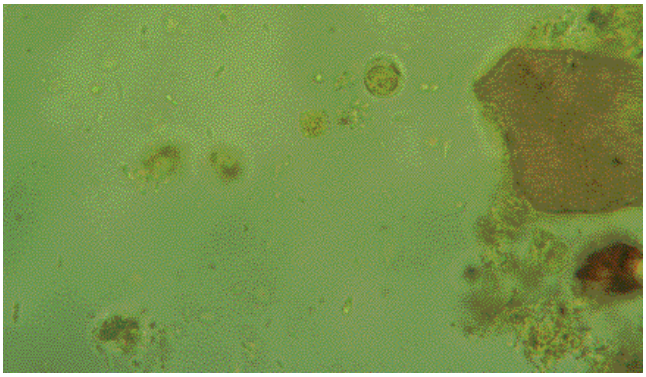

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Figure. High power wet mount of faeces with *Blastocystis hominis*.

Remember

- *Blastocystis hominis* is one of the most common enteric parasites encountered worldwide. It is commonly referred to as a protozoan parasite, but the latest taxonomic classification suggests that it is more closely linked with brown algae and water moulds in the Chromista group.[1]
- *Blastocystis* species have been identified in many animals, including earthworms, birds, dogs, possums and monkeys.[2] *Blastocystis* may also have zoonotic potential in dogs, possums and primates.[3]
- *Blastocystis* species that infect humans are conventionally named *B. hominis* although the group is genetically diverse and not species specific. Children appear to be less likely to be infected than adults.
- Polymerase chain reaction (PCR) techniques have shown that many different subspecies exist (at least seven), even within a host range.
- *Blastocystis* infection has been linked with acute and chronic diarrhoea (even bloody), acute abdominal pain and bloating (similar to symptoms of irritable bowel syndrome), reactive arthritis and chronic urticaria.
- There is no evidence of pathogenicity of *Blastocystis* in immunocompetent humans.[4] It remains possible, but unproven, that some *B. hominis* strains may be pathogenic in human hosts. The multiple subspecies of *Blastocystis* may partly explain these contradictory findings. *B. homini* often coexists with other pathogens.
- Multiple morphological forms of *Blastocystis* have been described in the bowel, including a vacuolated form with or without granules (ranging from 5 to 40 µm in diameter), an amoebic form and cysts. The cysts are the most likely vehicle of transmission via the faecal–oral route. The number of excreted organisms varies from day to day and the parasitic load or morphological type displayed in the faecal specimen may not be significant.
- The organism is found predominantly in the ileum and caecum. The endoscopic mucosal appearance has been reported as normal in the few studies performed on relatively well patients with *Blastocystis* infection. Shedding of the organism has been reported for up to two months in asymptomatic patients and the thick walled cyst may remain viable for many days outside the host.
- *B. hominis* was the most common organism identified in faecal samples submitted to a Queensland pathology laboratory in 2005 (found in 8.2% of all samples) and *Giardia lamblia* was the second most common organism (found in 2.5% of all samples).[5]

Assessment

- *B. hominis* is identified in the laboratory using light microscopy of a fresh or preserved faecal specimen. Faecal concentration and staining techniques are also used. These morphological techniques significantly underestimate the presence of *B. hominis* compared with culture techniques.
- Although finding the organism in faecal samples is not difficult, interpreting the significance of a finding can be as there is no consensus on whether *B. hominis* is a bystander or a pathogen.
- Studies have shown a high prevalence of faecal carriage of *B. hominis* in inhabitants of developing countries (up to 50%), patients with diarrhoea returning from overseas travel (up to 30%), close contact with animals, and men who have sex with men.[6]
- *Blastocystis* is not usually reported in association with large outbreaks of acute diarrhoea. A recent Australian study showed no difference in the faecal carriage rate of *B. hominis* in symptomatic and asymptomatic patients.[4]
- Symptomatic patients with *Blastocystis* infection should have a full investigation to exclude other causes of their symptoms

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(such as coeliac disease, inflammatory bowel disease and colorectal cancer) before a diagnosis of *Blastocystis* infection is given.

- In the laboratory, *B. hominis* subspecies have successfully infected chickens and rats.[7] The development of animal models along with improvement in PCR identification techniques may progress research.
- Reliable conclusions in research studies investigating *B. hominis* are confounded by the difficulty in completely excluding other causes of symptoms in patients, the variability of excretion and detection of the organism, the possibility of different pathogenic subspecies with or without toxins or pathogenic symbiotic relationships, and the lack of specificity of therapy.

Management

- Symptomatic patients should be given a trial of antibiotic therapy if no other cause can be found for their symptoms. However, eradication of *B. hominis* is often difficult and optimum treatment options remain uncertain. Treatment of asymptomatic patients is not currently recommended.
- Suggested initial treatment options in adults are metronidazole (Flagyl, Metrogyl, Metronide) 400 to 750 mg three time daily for 10 days, and trimethoprim and sulfamethoxazole (Bactrim, Resprim, Septrin) 800/160 mg twice daily for 10 days. Tinidazole (Fasigyn, Simplotan) is also used in clinical practice. Nitazoxanide 500 mg twice daily for three to 10 days has been reported to be efficacious in over 80% of symptomatic patients.[8]
- Significantly lower eradication rates (less than 50%) have also been reported and these findings are consistent with the author's own experience.
- Resistance to metronidazole has been reported. Treatment failures are often associated with low drug doses, short duration of therapy and the patient having a long duration of symptoms. Cyst excretion occurs for many weeks and the optimum duration of therapy may need to be four weeks.
- Nitazoxanide is not registered for use in Australia but is available via the TGA Special Access Scheme (02-6232 8111, www.tga.gov.au/ hp/index.htm#sas). The drug is distributed through Tri-Med (08-9388 1444, www.trimed.com.au/ therapeutics-nitazoxanide.html). MT

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A list of references is available on request to the editorial office.

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