

Why women suffer more than men ...

Trust Medical Advisor Dr Nick Read ponders the difference between men and women and wonders whether increased sensitivity might explain why women are more likely to get Irritable Bowel Syndrome than men.



'Much is made of a woman's ability to carry out several different roles at the same time; mother, wife, lover, housekeeper and employee, but this emotional balancing act can only be achieved at the cost of secrecy, guilt or frustration, which is often played out in the body.'



Also in this issue...

- A 'magic bullet' for IBS?
- How to tackle discrimination in the workplace
- Experiences of IBS – pity the poor teacher stuck in the classroom ... and in urgent need of the loo

Ken Boorom believes a little known organism called Blastocystis raises some questions about the relationship between IBS, medicine and science

A 'magic bullet' for IBS?



Ken Boorom is the volunteer director of the Blastocystis Research Foundation (BRF) www.bhomcenter.org. He has Bachelors and Masters degrees in Science from Stanford University, has taught at Universities in Oregon and Idaho and has served on a National Science Foundation grant review committee. He founded BRF after he and his two children developed chronic gastrointestinal illness in April of 2003 after eating at a Thai restaurant.

In 2005, an event transpired that every IBS patient should know about. The Nobel Prize in Medicine was awarded to two Australian Gastroenterologists – Dr Marry Marshall and Dr J Robin Warren – for their work in discovering that a bacteria was the cause of most stomach ulcers. The pair developed an antibiotic treatment that allows most patients to be cured.

This discovery is remarkable, but Dr Marshall's insights into the medical research community may be even more revolutionary. In 2002 he published a book of rejection letters and personal accounts from researchers who had made the same discovery, some as early as 1965.¹ Because their findings conflicted with medical thought, public health officials felt it was irresponsible and worked to discourage investigation. Stomach ulcers used to kill over 6000 people each year in the United States alone, so it is regrettable that patients would have to wait decades for Marshall's rediscovery.²

The same pattern may be developing with respect to IBS. The infective organism this time is an enigmatic protozoan called Blastocystis and for 10 years researchers have been reporting that it is showing up at a statistically improbable rate in IBS patients.^{3,4,5,6} Researchers have begun using genetic techniques to examine Blastocystis in patients with gastrointestinal illness, and their findings may have a significant impact on the treatment of IBS.

When the concept of IBS was first introduced, scientists considered the possibility that an undiagnosed gastrointestinal infection was the cause of the illness. IBS involves both constipation and diarrhea, a combination found in certain protozoal infections.⁷ The first infectious organism examined was *Entamoeba histolytica*, an amoebic infection which can produce constipation and even psychiatric illness in long term infections.⁸ A study found patients were not infected with this organism.

But Blastocystis, the other organism known for producing these symptoms, was the subject of controversy. Physicians in less developed countries maintained that it causes chronic abdominal pain, diarrhea, constipation, fatigue and even headaches and depression in patients.⁹ Physicians in developed countries viewed it as harmless, and believed their counterparts were incorrectly attributing their patients' symptoms to this organism.¹⁰

Scientific research has advanced our understanding of Blastocystis considerably in the last 10 years. In 2006, Malaysian researchers dem-

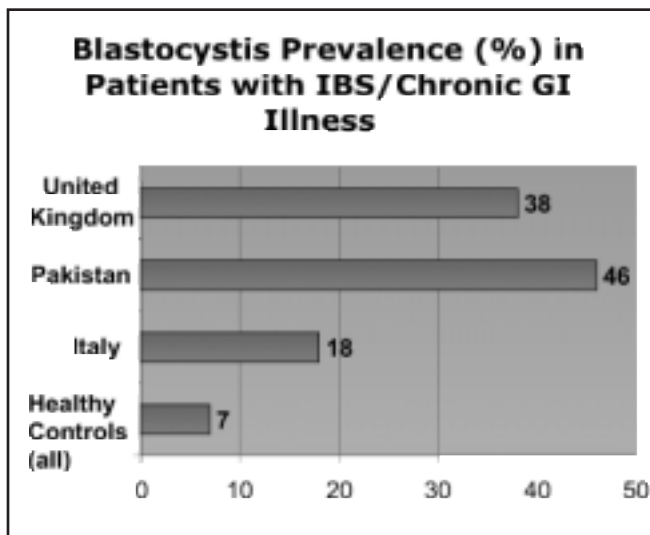
onstrated that two types of Blastocystis exist – one is harmless and one causes disease.¹¹ A recently published study from Denmark reported data showing that when Blastocystis is found by itself in sick patients, it is of a type that can infect cattle, and not a different type associated with dogs.¹²

This may explain why travelers to less developed countries return home with chronic diarrhoea and abdominal pain. This may also explain why researchers in Europe and the United States have been at odds with researchers in the Middle East and Asia, where the disease causing type of Blastocystis may be more common. Animal studies have advanced as well, and researchers can consistently demonstrate illness in mice infected with Blastocystis.¹³ In one study, the mice died when infected with a Chinese isolate of Blastocystis.¹⁴

In July 2007, the Dr Jeff Windsor, a senior biomedical scientist in the Aberystwyth National Public Health Service, joined researchers from Italy and Pakistan in reporting that Blastocystis infection is showing up in UK patients with IBS and chronic lower gastrointestinal illness at a significant rate.⁶ He reported data from the London School of Hygiene and Tropical Medicine that Blastocystis can be identified in 38% of patients with chronic bowel problems (vs 7% of the general population in a separate study).

Dr Graham Clark, an expert in protozoal genetics at the Institute for Tropical Medicine and Hygiene in London, reports that, "The genetic diversity exhibited by Blastocystis may in part be responsible for the lack of a consensus regarding its role, if any, in disease. The problem has always been in reconciling population surveys, which often show no link between Blastocystis infection and symptoms, with individual cases, where a good argument for such a link can be made. If only certain subtypes can cause symptoms in humans, in population surveys this information would be lost unless genetic typing was performed."

But if IBS is really undiagnosed Blastocystis, then why should only 38% of the IBS patients be infected? A research team from Denmark may have provided the missing key by showing that many patients infected with Blastocystis have symptoms, but the infection can not be detected in stool samples even when carefully examined with a microscope, a phenomenon that has occurred with several new protozoal infections. The researchers detected Blastocystis using a more sensitive DNA-based technique similar to that used by the police to match



Gastroenterologists and pathologists from University hospitals in these countries have reported a substantially higher prevalence of Blastocystis infection in patients with IBS or chronic gastrointestinal illness. When doctors used more advanced molecular tests, they found many IBS patients showed an elevated immune reaction to Blastocystis even when it couldn't be found with a microscope. 4, 5, 6

blood samples to criminals. This finding may also explain why a study from the University of Utah found that 40% of travelers are now returning from international travel with chronic diarrhoea, but no infection can be found.¹⁵

While it may seem like a no-brainer that a protozoal infections can make you sick, it isn't so easy to convince funding agencies. No microbiology lab in the UK has regular government funding for Blastocystis research, although Pakistan, China, Egypt and Malaysia seem to think it is important enough to study. If better diagnostics show that IBS patients are infected with disease causing types of Blastocystis, it could lead the way to a permanent cure, similar to that used to cure patients of stomach ulcers. But the cure for stomach ulcers was developed in a microbiology lab, a facility your family doctor doesn't have access to. The same may be true for Blastocystis because in-vitro studies

have found it's become resistant to most common drugs.^{16, 17} Some antiprotozoals that were available until the 1980's may be effective, but they were removed from the market when newer drugs were developed.¹⁸

From Dr. Marshall's book, we know that the medical system can take decades to fund the research needed to correct scientific errors, especially in chronic GI illness. So take a minute to write your MP in the House of Commons to ask them what kind of funding is being provided to microbiologists to investigate infectious causes of chronic gastrointestinal illness. Support from IBS advocacy groups may be the key to driving the research and treatments needed to get rid of mysterious gastrointestinal illness.

• For further information on Blastocystis see www.bhomcenter.org

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Dr Nick Read remains far from convinced

Ever since *Helicobacter pylori* was identified as a cause of duodenal ulcers, clinical scientists have considered the possibility that IBS might also be caused by an, as yet, unidentified micro-organism. We know that salmonella, shigella, pathogenic *e. coli* and several viruses and parasites can cause inflammation of the gut and induce all the symptoms of bowel irritability and sensitivity, but such attacks of gastroenteritis usually last no longer than a week.

The gut immune system usually evacuates the infection along with the diarrhea. When the symptoms persist for longer, research over the last ten years has indicated that unresolved emotional upset occurring around at the time of the original illness may be responsible. It is as if the symptoms of the infection have been recruited to express what has been going on.

The most recent paper on this topic was published (August 2007) in *Gut* by M Spence and R Moss-Morris. The inference is that IBS may well be instigated by an infectious agent, but whether somebody develops chronic illness may depend on ongoing emotional tension.

The big breakthrough in our understanding of duodenal ulcers in the nineteen eighties was

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the discovery of *Helicobacter pylori*, but *H. pylori* is a common organism. It lives in the stomachs of most people who have it quite happily without causing any symptoms, but research has suggested that you are more likely to get an ulcer if there are distressing things going on in your life at the same time.

Does the same principle apply to Blastocystis hominis as a putative cause of IBS? Like *Helicobacter*, Blastocystis is commonly found in the gut in the parts of the world where it exists, but in most people does not result in symptoms. Again, the suspicion is that although this organism clearly has the potential to cause gut upset, but whether it does or not or whether such symptoms persist as chronic IBS may

depend on what is going on in a person's life. Of course, if the organism is still present in the gut, it should be eradicated, but the chances are it will recur.

Diseases rarely have a single cause. They are an interaction between an external factor, whether this be a bug, an allergen, or a toxin and the environment of the host – in other words, what's going on in the patient. We have known since the birth of civilization how people weakened by malnutrition and poverty are particularly susceptible to illness. The same applies to people undermined by emotional distress. The dramatic potential of the Tubercle bacillus to devastate the health of young men and women crossed in love is a dramatic theme of many novels of the nineteenth and early twentieth centuries.

Dr Boorom rightly draws our attention to Blastocystis as a potential cause of IBS. Much more research needs to be conducted before we can gain a real perspective on that potential, but such research must take full account of the factors that influence the susceptibility of the individual.

Dr Nick Read