BACTERIAL OVERGROWTH IN IBS

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In the December issue of the American Journal of Gastroenterology, a relatively small study peaked the interest of news reporters, primarily because it was believed that "the answer" to understanding and treating IBS was at hand. The article entitled "Eradication of Small Intestinal Bacterial Overgrowth Reduces Symptoms of IBS" by M. Pimental, E.J. Chow and H.C. Lin found that 78% of 157 patients referred to their center for breath hydrogen testing for bacterial overgrowth were found to have bacterial overgrowth. Furthermore, over half (25 of 47) of the patients who were treated with antibiotics and came back for later testing had a reduction in their IBS symptoms.

We recognize bacterial overgrowth in the small intestine to be associated with symptoms similar to IBS (bloating, abdominal pain and diarrhea), and those who have the proper equipment (as we do at our Center), can perform this test easily and painlessly. The subject drinks about a quart of a sugar solution (e.g., lactose) that is not absorbed in the small intestine, so it usually passes to the large intestine where it is broken down by bacteria and gas is produced as a waste product which is sent to the lung as hydrogen. Because bacteria are found in very high concentration in the large, but not the small intestine, the production of the gas occurs late (after 90 minutes). So when more than the usual number of bacteria is found in the small intestine (bacterial overgrowth), they will digest the lactose sooner, producing an earlier excretion of hydrogen in the lungs. In addition, the patients may also develop symptoms of gas, bloating and diarrhea. When bacterial overgrowth is diagnosed, it can be treated with antibiotics and this will reduce the symptoms, at least. What was different about this article was that the frequency of bacterial overgrowth in this study was far higher than clinicians and investigators had previously found.

The information reported was met with a great deal of enthusiasm. To quote Reuter's press on 12/13:"Los Angeles, CA - Irritable bowel syndrome, a chronic condition believed to plague 20% of the adult population.....May be caused by too much bacteria in the small intestine, researches said Wednesday. ' It was the first time a potential cause for the disease has been identified and could lead to a radical shift in treatment', according to the lead investigator of the study. 'This is really exciting because it points to the cause of the disease. Treatments for IBS to this point have been directed at symptoms, not any cause' said Dr. Mark Pimental.....". This kind of information was communicated in newspapers, TV and the Internet, and Drs. Whitehead and I were asked to comment as to whether this was indeed a major breakthrough in research.

Before getting too encouraged, it would help to identify some of the limitations of this study before drawing any conclusions:

Patients were referred to the medical center specifically for breath hydrogen testing after being evaluated by physicians who suspected this diagnosis. This would tend to skew the proportion of persons with positive studies, simply because the doctors have already suspected the diagnosis. So the 78% figure may be higher than might occur in a better designed study.

This is not a placebo-controlled double-blinded study. In well-designed studies, a proportion of subjects receive a placebo, so the investigators can compare the benefits of those on the active treatment to those on placebo. In addition, usually, neither the study subjects nor the investigators know who is getting the active drug or placebo. But when there is no placebo, then all patients (and investigators) will know they are receiving the active treatment (i.e., the antibiotics), and they may do better ("placebo effect") because they expect to do better. So the level of improvement here might be higher than if the study subjects did not know which treatment they were getting.

Although 157 patients were tested for bacterial overgrowth, less than 1/3 were actually tested with regard to benefits from treatment. It is unclear why so few patients came back. Were the ones who didn't come back doing better or worse? Preferably, efforts need to be made to study all patients in order to know if the results are valid.

This was a "convenience study". It appears that the authors went back in the clinical records to report their results rather than design a prospective study where patients follow a specific protocol. For example, at least four different antibiotics were used by different physicians. So it is unknown whether

one antibiotic might be better than another, and these kinds of differences in how the study is conducted will interfere with the conclusions that can be drawn from the study.
In summary, I believe that while the findings being reported are not a major breakthrough, they should increase awareness of one disorder that can mimic or worsen IBS. In our experience at the UNC Center for Functional GI and Motility Disorders, the frequency is much lower (maybe <10%) of people who come to us with IBS. But when we suspect bacterial overgrowth based on certain clinical features, we then test for it, and of course, there is a greater chance the test will be positive. In those cases we treat, and many (but not all) will respond; however, the symptoms may return.
Patients with IBS should consider a diagnosis of bacterial overgrowth if you have diarrhea, abdominal swelling and increased gas production within 30-45 minutes after eating. But these symptoms are also quite typical just for IBS. Your physician will work with you to determine if breath testing for bacterial overgrowth may be helpful.