A Serologic Test for Irritable Bowel Syndrome and Other News from ACG

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Researchers described an antibody test to identify patients with irritable bowel syndrome (IBS), while others reported the safety and efficacy of fecal microbiota transplantation for *Clostridium difficile* infection in immunocompromised patients. Furthermore, over a 30 y time period, screening by fecal occult blood reduces mortality from colorectal cancer. All these findings were reported at the ACG Annual Scientific Meeting last week in San Diego, CA.

Sera from patients with IBS were found to have higher levels of anti-vinculin antibodies than those without the disorder. Positive predictive values range from 90% to 100% depending on the cutoff values, reported Mark Pimentel (Cedars Sinai Medical Center, Los Angeles, CA). According to MedPage Today, a cutoff optical density above 0.8 identified patients with IBS with 81% specificity and a positive predictive value of 93%. There is currently no biomarker assay for IBS, which is diagnosed based upon exclusion of other disorders and the Rome criteria. Pimentel explained that “those criteria aren't specific … in one study we found that only 67% of IBS patients met those criteria.”

IBS frequently arises after an episode of gastroenteritis. Studies in animals showed that a toxin produced by gastroenteritis-causing bacteria such as *Campylobacter jejuni*, cytolethal distending toxin B (cdtB), can cause IBS-like effects. Furthermore, antibodies against cdtB react with samples of intestine from healthy rats and rat models of IBS.

Believing molecular mimicry to be involved, Pimentel and colleagues determined that the anti-cdtB antibodies also react with vinculin — a cytoskeletal protein required for neuron migration.

Pimentel proposed that many patients with IBS, during previous episodes of gastroenteritis, developed antibodies to cdtB, which cross-reacted with vinculin in the intestine to cause IBS.

To evaluate the diagnostic potential of an ELISA for anti-vinculin antibodies, Pimentel et al. analyzed serum samples 162 patients with IBS, 30 with inflammatory bowel disease, and 26 healthy controls.

They found that patients with IBS had much higher levels of antibodies against vinculin, whereas those with inflammatory bowel disease had higher levels of the anti-cdtB. Furthermore, patients...
who reported a history of acute gastroenteritis had the highest levels of antibodies against vinculin. These findings indicate that some forms of IBS could be an autoimmune disorder.

Pimentel’s group found that the test for anti-vinculin distinguished patients with IBS from those with IBD with 88% specificity and a positive predictive value of 94%.

Pimentel said in a press conference that the test currently had no industry sponsor, but that he expected commercial interest in the future.

In other conference news, Colleen Kelly (Brown Alpert Medical School, Providence, RI) reported that fecal microbiota transplantation (FMT) is a safe and effective treatment for \textit{C. difficile} infection in immunocompromised patients. Her group found that the cure rate for \textit{C. difficile} infection after a single fecal transplant was 79% (52 of 66 patients). This rate increased to 89% after 7 of the 9 patients who underwent a second transplant were cured. Two patients died—one from complications of the colonoscopy procedure and 1 that was unrelated to the FMT. Importantly, there were no infectious complications from the FMT in these high-risk patients.

\textbf{Aasma Shaukat} (Minneapolis VA Medical Center) found that annual fecal occult blood screening reduced the mortality associated with colorectal cancer by one-third, with benefits persisting over 30 years. In the study, which began in 1975, the relative risk for colorectal cancer mortality was 0.68 for individuals screened annually and 0.78 for those screened biennially compared with those not screened. These findings translate into relative risk reductions of 32% and 22%, respectively.

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