

# Bacterial Gastroenteritis Ups Intussusception Risk

BY TIMOTHY F. KIRN  
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SALT LAKE CITY — A young child who has a bacterial gastrointestinal infection may have a 30 times higher risk of intussusception in the following 6 months, according to a study of cases from a large military database.

"There is a significant increased risk of intussusception in patients with a recent gastrointestinal infection," said Capt. Cade M. Nylund, MC, USAF, at the annual meeting of the North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition.

The potential association between bacterial gastroenteritis and intussusception had not been investigated before, although there had been case reports, Dr. Nylund said. He was prompted to look into the possibility of an association by the case of a 17-month-old girl with an intussusception who had had bloody diarrhea 2 weeks previously.

He searched the military's Patient Administration System and Biostatistics Activity database for all children 5 years old or younger who were seen with bacterial gastroenteritis at a military medical facility between January 2002 and December 2005. The search was conducted to find an ICD diagnostic-related group (DRG) code specifically for infection with *Yersinia enterocolitica*, *Escherichia coli*, *Campylobacter*, *Shigella* species, and *Salmonella* species.

Dr. Nylund, of the San Antonio Military Pediatric Center, also searched the records for a DRG code or a current procedural terminology code for an intussusception within 6 months after the infection.

He reviewed 387,514 persons, in which there

were 1,412 infections and 293 intussusceptions. The overall rate for intussusception in the reviewed patients, therefore, was 7.6 cases per 10,000 population, a rate that is consistent with previous population reports, Dr. Nylund said. Of the 293 intussusception cases, 37 were in patients who had been seen for bacterial gastroenteritis in the previous 6 months.

The analysis showed that the odds ratio for a case of intussusception in those with a previous bacterial gastrointestinal infection was 40. The increase in absolute risk was 30, he said.

The odds ratio in infants less than 1 year of age was 16, and the odds ratio for children between 1 year and 5 years was 56.

The organism with the most frequent association was *Salmonella*, which accounted for 18 of the cases and had an odds ratio of 46. The second most frequent association was with *E. coli*, which accounted for 12 cases and had an odds ratio of 33.

Five cases were associated with a *Shigella* infection and two with a *Campylobacter* infection.

No cases were associated with a *Yersinia* infection, but that may have been because it was so rare; the database included only four cases of *Yersinia* infection.

Most of the intussusceptions occurred within 8 days of the infection, although some occurred months afterward. Dr. Nylund said it was not possible to know whether there was increased risk beyond 6 months, because he looked only for an association within 6 months, a period of time he chose arbitrarily.

The association between infection and intussusception could be related to hyperplasia caused by the infection, or could be linked to changes in motility, he said. ■

# CBT Eases Psychiatric Aspects Of Irritable Bowel Syndrome

BY BRUCE JANCIN  
Denver Bureau

VIENNA — Irritable bowel syndrome can be seen as an anxiety disorder—and, as such, responsive to cognitive-behavioral therapy.

"Core symptomatology of IBS is clearly physiological, but the cause of suffering and severe loss of function affecting many patients is better accounted for by the catastrophizing appraisal of symptoms and the related avoidance behavior," Dr. Sergej Andreevitch said at the annual congress of the European College of Neuropsychopharmacology.

A program of cognitive-behavioral therapy (CBT) targeting the negative evaluation of GI symptoms and resultant dysfunctional avoidance behaviors associated with IBS brought substantial improvement to participants in his pilot study. Next, Dr. Andreevitch, who is affiliated with the Karolinska Institute, Stockholm, plans to develop the treatment program into an Internet-based intervention.

He reported on 13 consecutive women with a mean age of 32 years and an 11.5-year history of IBS who had been referred for CBT from Stockholm-area GI clinics. The treatment program involved a 2-hour session weekly for 10 weeks, with four or five patients per group. The therapeutic strategy was modeled on well-established CBT programs for a variety of anxiety disorders. ■

As is typical in IBS, psychiatric comorbidity was common in this cohort. Nine of the 13 patients met diagnostic criteria for a specific phobia, panic disorder, generalized anxiety disorder, or dysthymia.

The psychotherapeutic intervention showed substantial efficacy. Scores on the daily patient-rated GI Symptoms Checklist of abdominal pain, tenderness, bloating, diarrhea, and constipation dropped from a baseline mean of 31.4 to 17.2 at conclusion of the CBT program and remained there at re-assessment 4 weeks later.

Mean scores on the Sheehan Disability Scale fell from 13.2 to 3.8, while Montgomery-Asberg Depression Rating Scale scores dropped from a baseline of 12.7 to 6.8, and Anxiety Sensitivity Index ratings went from 25.1 to 11.7. Meanwhile, mean scores on the IBS Quality of Life Index improved from a baseline of 53.1 to 83.0.

These outcomes compare quite favorably with conventional treatments, which typically are only moderately effective. These treatments include stool-modifying agents, analgesics, antidepressants, and dietary restriction.

The etiology of IBS is poorly understood. One view is that noxious stimuli in the gut activate the brain-gut axis, resulting in stimulation of fear and arousal centers in the central nervous system. It is second only to the common cold as a cause of work absences. Affected patients often have high rates of medical services utilization. ■

# Ultrasound Classification Aids Diagnosis of Appendicitis in Kids

BY BRUCE K. DIXON  
Chicago Bureau

CHICAGO — A new ultrasound classification that elevates the importance of secondary signs in acute appendicitis facilitates surgical decision making in the diagnosis or exclusion of appendicitis in children.

"[It] improves sensitivity in children with suspected acute appendicitis. The presence of secondary signs makes acute appendicitis most likely, and the absence of these signs can safely rule out acute appendicitis in children," said Dr. Fraukje Wiersma, at the annual meeting of the Radiological Society of North America.

The classification for diagnosing pediatric appendicitis comes at a time of increasing concern over the widespread use of computed tomography (CT) and the radiation risk it poses to children.

"In addition, the lack of abdominal fat in children makes them less suitable for CT," said Dr. Wiersma, of The Hague (the Netherlands) Medical Center.

According to the literature, the abdominal ultrasound is considered positive only when an inflamed appendix is depicted by the sonogram. "Although secondary signs such as inflamed fat or fluid are described, they are considered to be nonspecific find-



The ultrasound image (left) shows a transverse section of a normal appendix. The longitudinal section (right) shows an inflamed appendix (arrows) and mesenteric fat.

ings and are excluded in the calculation of sensitivity, specificity, and predictive values," Dr. Wiersma said in an interview.

Between May 2005 and June 2006, Dr. Wiersma and her colleagues conducted ultrasound examinations of 212 consecutive pediatric patients aged 2-15 years with suspected appendicitis. The mean age was 10 years, and 129 of the children were boys.

Depiction of the appendix was classified into four groups: In group 1, the appendix was normal; in group 2, the appendix not depicted and no secondary signs of appendicitis were present; in group 3, the appendix was not depicted, but secondary signs of appendicitis (inflamed fat or fluid) were present; and in group 4, an inflamed appendix was depicted. Patients in the first



two groups had negative ultrasounds for appendicitis, whereas those in the latter two groups were considered positive and were treated surgically, she explained.

Ultrasonographic diagnoses were correlated with histopathological results or clinical follow-up. The investigators also calculated the negative appendectomy rate, the perforation rate, and predictive values of this four-part classification scheme.

In the 96 patients in group 1, there was one false negative, a patient who subsequently developed acute appendicitis. In the 41 patients in group 2 (those with no secondary signs), none had acute appendicitis at follow-up. In group 3 (those with secondary signs, including local dilated small-bowel loop, local fluid collections,

and/or increased echogenicity of mesenteric fat), 8 of the 10 patients had acute appendicitis, whereas 2 patients had negative appendectomies (1 had primary peritonitis and the other had a necrotic lymph node resected). Of the 65 patients in group 4 in whom ultrasound had detected an inflamed appendix, 62 had acute appendicitis.

Of the remainder, one patient had chronic inflammatory signs on pathological evaluation, one had a negative appendectomy (a true false-positive), and one was not operated on because of a "miscommunication" and left the hospital without further complaint.

"The prevalence of acute appendicitis in this study population was 34%, and the negative appendix read rate was comparable with that of other ultrasonographic and CT studies," Dr. Wiersma said.

The classification developed by the researchers, under the direction of Dr. Herma C. Holscher, had a sensitivity of 99%, a specificity of 96%, a positive predictive value of 93%, a negative predictive value of 99%, and an accuracy of 97%, she said, adding that the sensitivity—but not specificity—is significantly higher than that of the standard method (87%) described in the literature, when applied to this study population, she said. ■