NEWS

Large study ties gut issues in autism to inflammation

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Children with autism are at an increased risk for inflammatory bowel disease (IBD), according to a large survey of electronic medical records[1].

IBD includes the painful conditions Crohn's disease and ulcerative colitis, and is associated with an **overactive immune system**.

The analysis, based on almost 300,000 children in the United States, reveals that children with autism are 67 percent more likely than typical children to have a diagnosis of IBD. They also are more likely than other children to be prescribed certain medications for their bowel problems.

Numerous studies indicate gastrointestinal (GI) problems are unusually common among people with autism. For example, a 2014 study suggests that children with autism are about **four times as likely as other children** to have symptoms such as constipation, diarrhea or abdominal discomfort.

The findings suggest that clinicians should consider IBD in children with autism who have these symptoms or show poor growth.

Children with autism "often have difficulty articulating and describing symptoms such as abdominal pain," says lead investigator **Cade Nylund**, associate professor of pediatrics at the Uniformed Services University of the Health Sciences in Bethesda, Maryland. "We want to avoid delayed diagnosis of serious conditions like IBD."

The findings also may help to clarify the cause of gut problems in people with autism.

Although some researchers hypothesize that autism features such as sensory sensitivities or **picky eating** cause these problems, others suggest that they stem from issues with the GI tract.

"This paper supports the latter," says **Sonia Ballal**, a pediatric gastroenterologist at Boston Children's Hospital, who was not involved in the study. "It's suggesting that there might be some underlying inflammatory issue, or something else going on in the GI tract, that might be part of the bigger picture."

Revealing records:

Nylund and his team mined a database of medical and prescription records for members of the U.S. military and their families for records from children with autism. They found records for 48,762 children, aged 2 to 18, that include at least two mentions of an autism diagnosis. They matched these children by age and sex to 243,810 controls.

The researchers then searched the records for a diagnosis of IBD. To minimize the chances of including children with incorrect IBD diagnoses, they narrowed the pool to children whose records note a prescription for an IBD medication.

These criteria yielded 86 children with autism and 258 controls. The researchers examined the

pathology reports for 28 of the children with IBD and confirmed the diagnoses.

Extrapolating the results to the general population, the team arrived at an IBD rate of 176.4 per 100,000 children with autism and 105.8 per 100,000 controls. The results were published 23 November in the *Journal of Autism and Developmental Disorders*.

“We’re starting to get greater specificity [as] to the types of GI concerns that children with autism may face,” says **William Sharp**, director of the Feeding Disorders Program at the Marcus Autism Center in Atlanta, Georgia, who was not involved in the study.

Different drugs:

A 2015 study of medical records for nearly 1.5 million children arrived at a higher IBD prevalence among children with autism[2].

That study drew on records from two databases and two clinics; depending on the data source, the prevalence of IBD ranged from 361.9 to 630.6 per 100,000 children with autism and 186.4 to 433.4 per 100,000 controls. However, the study relied solely on IBD diagnostic codes, so it may have included some children who were incorrectly diagnosed with the condition.

Nylund’s study also revealed that children with autism are treated with second-line therapies for IBD 84 percent more often than controls are; these therapies are typically prescribed for people with severe bowel problems.

This finding suggests children with autism could have more severe IBD or subtypes of IBD that first-line treatments cannot manage, the researchers say.

An alternative explanation is that children with autism have trouble taking pills and must resort to more involved therapies.

The researchers suggest that future efforts should explore whether IBD and autism share biological underpinnings. Certain **genetic mutations** or **disruptions in the gut microbiome**, for example, might contribute to both autism and IBD.

REFERENCES:

1. Lee M. *et al. J. Autism Dev. Disord.* Epub ahead of print (2017) **PubMed**
2. Doshi-Velez F. *et al. Inflamm. Bowel Dis.* **21**, 2281-2288 (2015) **PubMed**