

EDITORIAL

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Is There a Relationship Between Autism and Gastrointestinal Disease?

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Abstract: Is gastrointestinal disease more prevalent in children with autism? There are arguments favoring both sides of the controversy. We present data collected from the medical history of a recent Autistic Genetic Resource Exchange (AGRE) database of autistic children and their siblings, demonstrating that autistic children may be significantly more susceptible to overall GI disease, as well as chronic diarrhea and constipation specifically. Many autistic children have GI disease, however, whether this disease is significantly increased in children with autism is still being debated.

Keywords: autism, GI disease, inflammation

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Introduction

Is gastrointestinal disease more prevalent in children with autism? A recent report in *Pediatrics*¹ rekindled what was a smoldering controversy. In that study, which involved 121 autistic children and 242 control subjects, autistic children were more likely to be diagnosed with constipation ($P = 0.003$), and more likely to have issues with feeding and food selectivity ($P = 0.009$). Yet the authors concluded that, because of “behavioral features that define autism ... the overall incidence of GI symptoms did not differ between children with autism and control subjects.”

So the controversy continues. Some reports staunchly deny any association between autism and GI disease^{2,3} and other data clearly show that a significant number of autistic children have gut problems.⁴⁻⁶

The controversy is even more complex than that, however. There are studies which show that a significant number of children with autism have increased inflammation in the GI tract,⁷⁻⁹ perhaps even a unique type of enterocolitis,¹⁰⁻¹⁴ and, in contrast, others have shown that there is no increased incidence of inflammation at all.^{2,3,15}

Methods

We recently analyzed the complete medical history records of the Autistic Genetic Resource Exchange (AGRE), a DNA repository and family registry sponsored by Autism Speaks, including contributing

family members who have had extensive evaluations by a variety of pediatricians, psychiatrists, and other neurodevelopmental specialists, and the diagnosis of autism for all patients was made using the standard Autism Diagnostic Interview-Revised (ADI-R) algorithm.

In the medical history report, parents were asked to identify whether their autistic child (or children) and non autistic sibling(s) had GI disease and, if so, what type of disease.

Results

Parents or guardians of 692 children (mean age 9.1 +/- 5.1 years) with autism and 187 non autistic siblings (mean age 10.5 +/- 6.6 years) responded to the GI questions. Results (Table 1) show that there is a significant difference in the presence of GI disease in autistic children compared to non autistic siblings ($P < 0.001$), as well a significant difference in the presence of chronic diarrhea ($P < 0.001$) and constipation ($P < 0.001$).

Discussion

To add to the complexity of this argument, there are weaknesses associated with how data is gathered and reported by each side of the debate. One flaw of this study is that the information provided is recalled retrospectively by parents or caregivers, who are often not thorough, and are frequently forgetful when providing

Table 1. AGRE data. shows that autistic children have significantly higher overall GI disease, chronic diarrhea and constipation compared to non-autistic sibling controls.

Respondants	Autistic 692		Non-autistic 187		Significance
	Frequency	Percent	Frequency	Percent	
Overall affected (GI)	296	43	23	12	$p < 0.001$
GER	13	4	6	26	
PUD	0	0	1	4	
IBS	2	1	2	9	
IBD	0	0	0	0	
Chronic diarrhea	77	26	3	13	$p < 0.001$
Constipation	99	33	3	13	$p < 0.001$
Other	41	14	4	17	
Unknown	1	0	0	0	
Multiple	63	21	4	17	

Abbreviations: GER, gastrointestinal reflux; PUD, peptic ulcer disease; IBS, inflammatory bowel syndrome; IBD, inflammatory bowel disease.



medical history. Black and associates² reported results of a population based study of the relationship between gastrointestinal symptoms and diagnosed autism, using data from general medical practices located throughout the United Kingdom. They found no increase in a history of chronic gastrointestinal inflammation, celiac disease, food intolerance, or recurrent gastrointestinal symptoms among children with autism. They admitted, however, that the lack of structured interviews associated with their data, to ensure uniformity in the diagnosis of autism, was a limitation.

Regardless of the debate, there is no doubt many autistic children have GI disease. Whether this disease is significantly increased in children with autism is still being argued.

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