

Gastrointestinal issues in Autism: lack of evidence for specificity

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BACKGROUND

For many years the possibility that there is a gut-brain connection in autism has been proposed, based largely on reports that many children with autism have chronic constipation, diarrhoea and abdominal pain. There are also cases of gastroesophageal reflux and unusual gastroenterological reactions to some foods.

The hypothesis that gastrointestinal (GI) dysfunction might be similar in children with intellectual disabilities of genetic aetiology, irrespective of associated autism, has never before been tested.

OBJECTIVES

- 1 Identify the range of co-occurring GI symptoms in a national UK sample of children with pathogenic CNVs or SNVs that were associated with autism
- 2 Compare those comorbidities with children whose ID was not associated with autism.
- 3 Examine the association between GI problems and severity of emotional and/or behavioural problems.

METHODS

1,217 children and young people, aged between 5-19 years (M=9.1, SD=3.9) were recruited via UK National Health Service

Measures

- *Strengths and Difficulties Questionnaire (SDQ)*: Behavioural and emotional adjustment
- *Social Aptitude Scale*: Evaluates social understanding and behaviour
- *Medical Questionnaire*: GI symptoms history

RESULTS

- 34.3% (n=417) participants met criteria for autism. Participants were 54.7% male and 45.3% female.

- 40.3% of participants had GI problems.
- The most common GI symptoms were severe constipation (58.2%) and gastroesophageal reflux (52.1%).

- There was no significant difference ($\chi^2=3.4$) when we compared the proportion of participants reporting GI problems in those with autism (44.1%) with those whose ID was not associated with autism (38.6%).

- Within the autism group there were no differences in symptomatology between those with and without reported GI problems on the Social Aptitude Scale (Table 1).

- SDQ rated emotional difficulties were significantly higher in those with GI symptoms than those without.

- There were no differences in the severity of SDQ conduct, hyperactivity or peer difficulties.

GI problems No. (%)	All	ID only	ID + Autism	p-value
	N=1,217	N=800	N=417	
All GI problems	493 (40.3)	309 (38.6)	184 (44.1)	0.06
- Severe constipation	287 (58.2)	175 (56.6)	112 (60.9)	0.18
- Reflux	257 (52.1)	163 (52.8)	94 (51.1)	0.24
- Any other	172 (34.9)	110 (35.6)	62 (33.7)	0.24

Table 1. GI characteristics

Autism Mean (SD)	All	No GI problems	GI problems	p-value
	N=417	N=233	N=184	
Strengths and Difficulties Questionnaire				
Conduct problems	3.8 (2.4)	3.7 (2.4)	3.9 (2.3)	0.29
Emotional difficulties	5.2 (2.8)	4.9 (2.7)	5.5 (2.9)	0.049
Hyperactivity difficulties	8.2 (2.0)	8.1 (2.0)	8.2 (2.1)	0.27
Peer difficulties	5.5 (1.9)	5.6 (1.9)	5.4 (1.9)	0.37
Social ability				
Social Aptitude Scale	7.5 (5.2)	7.1 (5.2)	7.9 (5.1)	0.17

Table 2. GI problems in ID + Autism

INTERPRETATION

- Our study found no difference in the nature of GI symptoms when we compared children with autism and ID with children whose ID was not associated with autism traits.
- Although it had previously been assumed that the high prevalence of GI disorders in children with autism could be linked causally to the condition, through increased intestinal permeability for example, it seems there is no specificity in that association.