Celiac disease in children with Autism Spectrum disorder

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Abstract— **Background**- Gastrointestinal dysfunction is an emerging co morbidity seen in autism and may further strengthen the association between autism and celiac disease. This is supported by increased rates (22–70%) of gastrointestinal symptoms like diarrhea, constipation, abdominal discomfort/pain and gastrointestinal inflammation in children with The etiology of Autism is still elusive. In addition to genetic factors ,environmental factors such as toxin exposure, intrauterine exposure to certain teratogenic drugs, are being proposed as possible contributing factors in the etiology of Autism Spectrum Disorders (ASD) In cognizance with reports of increased gut permeability and high rates of gastrointestinal symptoms noted in children with ASD, celiac disease has also been proposed as a possible etiological factor. Despite inconclusive evidence, many children with ASD are being advised Gluten-free diet. This study was undertaken to elucidate any association between ASD and celiac disease

Objective - This cross sectional study aims to determine the proportion of celiac disease in children with ASD

Methods –Study included 155 participants aged 2-12 yrs, diagnosed as ASD as per DSM-5 attending the child development center at a tertiary care hospital in Northern India .Those on gluten free diet or having other autoimmune conditions were excluded. A detailed proforma was filled which included sociodemographic details, history of gastrointestinal symptoms, anthropometry, systemic examination and pertinent psychological testing with the following

- Developmental Quotient/Intelligent Quotient was assessed using Developmental Profile-3(DP-3)
- Severity of ASD as per Childhood Autism Rating Scale-2 (CARS-2)
- Adaptive behavior by Vineland Adaptive Behavior Scales (VABS)
- Behavioral problems were assessed on Child Behavior Checklist (CBCL)
- eeding problems were assessed using BAMBI(Brief Autism Mealtime Behavior Scales)

Screening for celiac was done by TTG-IgA levels and total serum IgA levels were measured to exclude IgA deficiency. Those with positive screen where further planned for HLA typing and endoscopic biopsy.

Results-A total of 155 cases were included out of which 5 had low IgA levels and were hence excluded from the study. The rest 150 children had TTG levels below the ULN and normal total serum IgA level. History of Gastrointestinal symptoms was present in 51 (34%) cases Abdominal pain was the most frequent complaint (16.6%), followed by constipation (12.6%). Diarrhea was seen in 8 %. Gastrointestinal symptoms were significantly more common in children with ASD above 5 yrs (p value 0.006) and those who were verbal (p = 0.000). There was no significant association between socio-demographic factors, anthropometric data or severity of autism with gastrointestinal symptoms.

Conclusion - None of the150 patients with ASD had raised TTG levels, hence no association was found between ASD and celiac disease. There is no justification for routine screening for celiac disease in children with ASD.. Further studies are warranted to evaluate association of Non Celiac Gluten Sensitivity with ASD and any role of gluten-free diet in such patients.

Keywords— Autism,celiac,gastrointestinal,gluten.

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