# Evaluation and treatment of patients of celiac disease at a tertiary level centre in Jaipur city

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## ABSTRACT

**Background:** Celiac disease (CD) is an autoimmune disorder of the small intestine. Developed countries carry the burden of 0.5-1% undetected cases of celiac disease however, the prevalence of CD in Indian patients with nutritional anaemia is not known.
**Aim:** To evaluate and manage the children presenting with typical clinical features of celiac disease on IPD basis.
**Methods:** A retrospective study was conducted at a tertiary level centre (Mahatma Gandhi Medical College and Hospital) in Jaipur city during the year 2008-2012. Children below the age of 15 years, altogether 33, were included in this study. Records of all these patients who presented with typical clinical features of celiac disease were studied and in-depth analysis was done.
**Result:** Mean age group of patients were from 20 months to 15 years. From all of these, 17 patients were <3$^{rd}$ centile (51.5%), 4 at 15$^{th}$ centile (12%) and 12 at 50$^{th}$ centile (36%). 27 patients had pallor(81%) and 21 had failure to thrive (63%).out of these 27 patients who had pallor, 14 patients(42.4%) were found to be severely anaemic and they received blood transfusion.
**Conclusion:** The patients presenting with significant pallor and failure to thrive should always be suspected for the possibility of celiac disease and should be excluded before labelling and treating it only as anaemia.

***Key words*:** celiac disease, failure to thrive, duodenal biopsy, TTG

## INTRODUCTION

Celiac disease is an autoimmune disorder of the small intestine that occurs in genetically predisposed people of all ages from middle infancy. Vitamin deficiencies are often noted in people with celiac disease owing to the reduced ability of the small intestine to properly absorb nutrients from food. Upon exposure to gliadin, and specifically to three peptides found in prolamins, the enzyme tissue transglutaminase modifies the protein, and the immune system cross-reacts with the small-bowel tissue, causing an inflammatory reaction. That leads to a truncating of the villi lining the small intestine (called villous atrophy). This interferes with the absorption of nutrients.

Diarrhoea is the hallmark of classical celiac disease and provides valuable clue to the diagnosis of celiac disease.[1] Many developed countries shows 0.5-1% of undetected celiac disease.[2-3]The only known effective treatment is a lifelong gluten-free diet.

## MATERIALS AND METHODS

A retrospective study was conducted at a tertiary level centre (Mahatma Gandhi Medical College and Hospital) in Jaipur city during the year 2008-2012. Children below the age of 15 years, altogether 33, were included in this study.

Medical information as well as preliminary data was noted with a focus on the presenting complaints, signs and symptoms, investigation including complete blood profile, serological test like TTG level and duodenal biopsy in some of the patients. Diagnosis was confirmed on the basis of TTG level and endoscopic guided small bowel biopsy. TTG level was done in all the patients while duodenal biopsy was done in 14

patients. Diagnosis was confirmed on the basis of both serology and duodenal biopsy.[4] serology was done in all the patients while 14 were undergone through duodenal biopsy procedure.

Once the case was diagnosed, they were given gluten free diet along with iron, B-12 and folic acid. Proper counselling was done to the patients and their family members regarding gluten free diet. Patients were then called up for follow up in the OPD with a period of 3 months gap till one year. Weight and height measurement, complete blood counts and repeat TTG level were done in all the patients.

Out of 33 patients, 27 found to be anaemic. Few of them received iron, folic acid, vitamin B-12 while fourteen patients received blood transfusion along with iron, folic acid and vitamin B-12.

## RESULTS

Female patients predominate over males. Age ranges from 20 months to 15 years. Sixteen patients were in the age group of 6-15 years (54.5%) while 14 were in the age group of 2-5 years (42.4%) and 3 patients were below 2 years.

Weight and height were recorded of all the patients on admission. As 21 patients took follow up so their weight, height, complete blood count and TTG level done on at one year follow up. Rest of 12 patients did not come for follow up. The salient clinical signs and symptoms manifested are tabulated in Table.1.

**Table.1.** Clinical signs and symptoms

| | |
|---|---|
| Pallor | 27 (81%) |
| Failure to thrive | 21 (63%) |
| Loose stools | 19 (57%) |
| Easy fatigue | 17 (51%) |
| Anorexia | 15 (45%) |
| Abdominal distension | 14 (42%) |
| Constipation | 09 (27%) |
| Poor school performance | 08 (24%) |
| Nocturnal frequency of stool with sticky stool | 08 (24%) |
| Splenomegaly | 08 (24%) |
| Delayed milestones | 08 (24%) |
| Koilonychia07 (21%) | |
| Flag sign | 04 (12%) |
| Decrease urine output | 02 (6%) |
| Edema over face and legs | 02 (6%) |
| Earache/Ear discharge | 01 (3%) |
| Night blindness | 01 (3%) |
| Dermatitis | 01 (3%) |

**Table.2**. Weight for age at diagnosis and follow-up

| Weight for age (in centile) | On admission (33) | At 1 year follow up (8) |
|---|---|---|
| <3rd | 17 (51.5%) | nil |
| 15th | 41(12%) | nil |
| 50th | 12(36%) | 03 (9%) |
| 75th | nil | 04(12%) |
| 90th | nil | 01(3%) |

**Table.3**.Height for age at diagnosis and follow-up

| Height for age (in centile) | On admission (33) | At 1 year follow up (8) |
|---|---|---|
| <3rd | 12 (36%) | nil |
| 15th | 14(42%) | 02(6%) |
| 50th | 03(9%) | 02 (6%) |
| 75th | 04(12%) | 04(12%) |
| 90th | nil | nil |

## DISCUSSION

Celiac disease (CD) is characterized by damage of the small intestinal mucosa caused by the gliadin fraction of wheat gluten and similar alcohol-soluble proteins (prolamines) of barley and rye in genetically susceptible subjects.

Self-perpetuating mucosal damage ensues with presence of gluten and dramatically there is full mucosal recovery as soon as the gluten is eliminated in these patients. Manifestations of this condition vary considerably depending on age of the patient, the duration and extent of disease, and the presence of extra intestinal pathologic conditions.

Non invasive serologic tests are in place and is massively utilised for screening of 'at risk' and general population. But the gold standard tool for confirmation still remains is biopsy(histology).

This study has provided an analysis of subclinical/silent cases of celiac disease. It also demand the need of be a diagnostic awareness and a better use of screening test.[5] Patient should be diagnosed not only on the basis of serology but duodenal biopsy should also be done in each and every case wherever possible. The guidelines are prescribed for diagnosis for celiac disease by the European Society of Paediatric Gastroenterology and Nutrition[6.] However, in our setting it is very important to rule out celiac disease in a patient of pallor, failure to thrive before labelling and treating it only as anaemia as both of these problems are commonly seen in patients of celiac disease.

## CONCLUSION

The patients presenting with significant pallor and failure to thrive should be suspected for the possibility of celiac disease and be excluded before labelling and treating it as anaemia only.

## AUTHOR NOTE

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