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Research Article

### TO DETERMINE THE HISTOLOGICAL, CLINICAL AND ENDOSCOPIC FEATURES OF CELIAC DISEASE

<sup>1</sup>Dr Muhammad Shoaib Manzoor, <sup>2</sup>Dr Athar Nafees Mutahhari, <sup>3</sup>Dr Nisar Hussain

<sup>1</sup>Postgraduate Trainee FCPS General Medicine at Shalamar Hospital Lahore PMDC 69620-p,

<sup>2</sup>Medical Officer Emergency Department Hussain Medical Complex Rawalpindi

Pakistan [drnafees76@gmail.com](mailto:drnafees76@gmail.com), <sup>3</sup>Medical officer ENT department, DHQ Hospital Bhakkar

Pakistan [nisar\\_h@ymail.com](mailto:nisar_h@ymail.com).

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**Abstract:**

*Objective:* To know the common clinical presentation, endoscopic and histological profile of celiac disease.

*Study Design:* A cross sectional study.

*Methods:* Fifty histologically proven patients with suspected celiac disease were included in the study.

*Place and Duration:* In the Gastroenterology Department of Jinnah Hospital Lahore for one-year duration from May 2018 to May 2019.

*Results:* Twenty-five (48.1%) were male and female were 27 (51.9%). The  $20.19 \pm 10.68$  years was the mean age. 43 (82.7%) patients had chronic diarrhea, 39 (75%) iron deficiency anemia, 34 (65.4%) weight loss, 17 (32.7%) abdominal pain, lack of growth in 15 (%) 28.8 and 15 (28.8%) patients were short stature. Abdominal distension in 13 (25.0%) cases, 8 (15.4%) patient of vomiting, 4 (7.7%) subjects of infertility, 7 (13.5%) subjects of delayed puberty, dermatitis herpetiformis in 1 (1.9%) cases were noted. Atrophic mucosa with mosaic in 20 (38.5%) cases, scalloped nodular mucosa in 15 (28.8%), atrophic nodular mucosa without comb in 6 (11.5%), normal mucosa in 6 (11.5%) 5 Duodenum folding cases and combs.

*Conclusion:* Celiac disease is gluten-sensitive enteropathy in both genders in all age groups with various bowel and extra bowel symptoms.

**Keywords:** Celiac disease, Intestine, Extra bowel, Endoscopic, Histological profile.

**Corresponding author:**

**Dr. Muhammad Shoaib Manzoor,**

Postgraduate Trainee FCPS General Medicine at Shalamar Hospital Lahore.

[Muhammad\\_Shoaib\\_Manzoor@yahoo.com](mailto:Muhammad_Shoaib_Manzoor@yahoo.com)

QR code



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**INTRODUCTION:**

Celiac disease is a systemic immune-mediated disease initiated by gluten diet in hereditarily disposed humans. Celiac disease is categorised by a wide series of clinical demonstrations, a response to specific serum autoantibodies, and small intestinal mucosa damage [1-3]. This disease has occurred more frequently than in the past, even if it is not often detected for a long time. Globally, it effects 0.6 to 1.0% of people in the entire age group and women outweigh men by a ratio of 2: 1 or 3:14, but may be more serious disease presentation in men. Previously, celiac disease was considered a disease of the European and Western populations, but has now become a global problem. Asia is recognized in all continents including the Middle East, North Africa, South America and Cuba [4-5]. The celiac disease pathogenesis comprises changes in intestinal permeability, an external trigger (gluten), HLA recognition, enzymatically modified gluten, and adaptive and natural immune reactions to gluten peptides including autoantigens that lead to celiac enteropathy eventually. In disease susceptibility; Genetic background have important role. In the majority celiac disease patients (90%); HLA-DQ2 haplotype is expressed in 1/3<sup>rd</sup> of the public. While in celiac disease; 5% of patients express the HLA-DQ8 haplotype, approximately one of two genes encoding DQ2 was noted in 5% of people. DQ8 and DQ2 haplotypes communicated on the antigen presenting cells surface may bind active gluten peptides that trigger an irregular response of immunity [6]. It is believed that celiac disease was a pediatric disease and had a wide belief. It is understood that children with delayed diagnosis of celiac disease appear in future life, whichever with archetypal symptoms such as malabsorption and chronic diarrhea, or atypical symptoms such as refractory anemia, short stature, and defects of tooth enamel or metabolic bone disease [7]. A large number of mature cases with celiac disease persist asymptomatic or silent. The purpose of this analysis was to know the histological and endoscopic profile of celiac disease in our local configuration in order to raise awareness about this disease.

**MATERIALS AND METHODS:**

This descriptive cross-sectional study involving 52 patients was performed in the Department of Gastroenterology and Hepatology Jinnah Hospital Lahore for one-year duration from May 2018 to May 2019. Patients with both sexes and celiac disease and histologically proven clinical suspicion were selected for the study. All subjects under one year, patients already diagnosed with celiac disease and have diet free of gluten, and subjects who were not eligible for upper gastrointestinal endoscopy were excluded from the study to reduce the bias in the study. Appropriate approval was obtained from the Ethics Committee of the institution before starting the analysis. From all cases; Informed consent was obtained with suspected celiac disease in the OPD, evaluated in the OPD or admitted to the ward and evaluated with detailed history, detailed clinical examinations and appropriate initial examinations. After the necessary examination, all patients were prepared for endoscopic examination, upper endoscopy was performed, findings were recorded and at least 4 to 6 biopsies of the second or third part of the duodenum were taken for histopathological confirmation. All subjects who met the criteria of inclusion and approved for inclusion were selected for the study. Thus, information collected throughout history, clinical examination, endoscopic evaluation, histological and serological examinations were entered into a form and bias was followed according to exclusion criteria. Data were analysed using SPSS version 18. The mean  $\pm$  SD was determined for continuous variables such as age. For categorical variables such as clinical picture, endoscopic and histological profile; frequencies were determined.

**RESULTS:**

A total of 52 patients (25 male and 27 female) were included in the study. Male to female ratio 1: 1.08. The mean age was  $20.19 \pm 10.68$ , minimum 3 and maximum 50 years. The most of the subjects were in the 11-20 age range, followed by the 21-30 age range (Table 1).

Table 1: Frequency and percentage of ages

Age (years)	No.	%
1 – 10	12	23.0
11 – 20	21	40.6
21 – 30	14	26.9
31 – 40	4	7.6
41 – 50	1	1.9

The most usual clinical presentation in 43 (82.7%) cases was chronic diarrhea, followed by iron

deficiency anemia in 39 (75%) cases, abdominal pain in 17 (32.7%) cases, weight loss in 34 (65.4%) cases,

lack of growth in 15 (28.8%) and 15 (28.8%) cases of short stature. There were abdominal distension in 13 (25.0%), vomiting in 8 (15.4%), late puberty in 7

(13.5%), infertility in 4 (7.7%) and dermatitis herpetiformis in 1 (1.9%) (Table 2).

**Table 2: Frequency and percentage of clinical presentations**

Clinical presentation	No.	%
Chronic diarrhea	43	82.7
Iron deficiency anemia	39	75.0
Weight loss	34	65.4
Abdominal pain	17	32.7
Failure to thrive	15	28.8
Short stature	15	28.8
Abdominal distension	13	25.0
Vomiting	8	15.4
Delayed puberty	7	13.5
Infertility	4	7.7
Dermatitis herpetiformis	1	1.9

Mosaic patterned atrophic mucosa was the most common endoscopic finding in 20 (38.5%) cases in the second part of the duodenum, followed by scalloped nodular mucosa in 15 (28.8%) cases. Six (11.5%)

cases had non-combed nodular mucosa, 6 (11.5%) had normal duodenal mucosa, and 5 (9.6%) had screening for duodenal folds (Table 3).

**Table 3: Frequency and percentage of endoscopic findings**

Endoscopic finding	No.	%
Atrophic mucosa with mosaic pattern	20	38.5
Nodular mucosa with scalloping	15	28.8
Nodular mucosa without scalloping	6	11.5
Scalloping alone	5	9.6
Normal mucosa	6	11.5

In our study, the most common histological finding was MARSH-III in 47 (90.38%) cases and MARSH-II in 3 (5.76%) cases. MARSH-I was present in 1 (1.92%) cases and MARSH-0 was present in 1 (1.92%) cases (Table 4).

**Table 4: Frequency and percentage of histological findings**

Histological findings	No.	%
Marsh - 0	1	1.9
Marsh - I	1	1.9
Marsh - II	3	5.8
Marsh - III	47	90.4

**DISCUSSION:**

Celiac disease can extant with classic clinical features, including diarrhea, weight loss, and poor nutrient absorption. There are, however, reports of a growing trend towards subclinical or silent demonstrations, ie presentation with subtle symptoms not clearly related to the gastrointestinal tract. Nutritional deficiencies and nonspecific symptoms are common, particularly in elderly subjects, and as a result, this curable condition diagnosis is mostly ignored or delayed [8-9]. Without an active serological examination, most cases of celiac disease remain undiagnosed. Although celiac

disease can be seen in all age groups, the mean age at diagnosis was  $20.19 \pm 10.68$  years and at least 3 years and at most 50 years [10]. Celiac disease is more common in women than in men, but this did not apply to our study and the onset of celiac disease was almost the same in male and female patients, but since most women were not present, we were in hospitals or too late in our study [11]. There may be a reason why the prevalence of celiac disease is the same in men and women. However, further studies are needed to know about the equal prevalence of celiac disease in our settings. In recent years, there has been an increasing

diagnosis that the presentation of celiac disease may change. It usually occurs with symptoms that were not previously considered as characteristic of the disease. Although most gastroenterologists appreciate the wider range and increasing prevalence of the disease, most practitioners still perceive it as a rare childhood or childhood condition with gastrointestinal symptoms still suggesting malabsorption [12]. Chronic diarrhea and other malabsorption characteristics, which are considered typical presentation features of celiac disease, have been the main complaint in our patients. This was the same in other studies at national level as Aziz et al in Karachi and Makharia et al in India, but this did not agree with a study by Ikram et al in Faisalabad [13]. Although celiac disease was shown as a gastrointestinal disease in our study, it seems that the gastroenterology department's general attitude towards treating the gastrointestinal problems medically, no patient in our study showed atypical gastrointestinal characteristics such as vomiting, Lack of growth in 8 (15.4%) and 15 (28.8%) cases, short stature in 15 (28.8%) cases, extraintestinal features such as late puberty in 7 (13.5%) cases, 4 (7.7%) Infertility in 1 case, and dermatitis herpetiformis in 1 case (1.9%), these patients should be evaluated for celiac disease [14]. In our study, the endoscopic and histological features of celiac disease were almost identical to other studies conducted in Pakistan and internationally. Therefore, it is necessary to raise awareness at the primary, secondary and tertiary levels that celiac disease has various intestinal presentations and with the change in presentation propensity, the extra-intestinal symptoms, thus patients with celiac disease are diagnosed in a timely manner and appropriately managed to prevent the occurrence of complications and the misery of the patient and family members [15].

### CONCLUSION:

Celiac disease is a gluten-sensitive enteropathy that occurs in both genders in all age groups with various bowel and extra bowel symptoms and typically exhibits a varying trend in the presentation of typical to atypical gastrointestinal symptoms which doctors should be aware to prevent delays in the diagnosis and treatment of celiac disease.

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