FREQUENCY OF CELIAC DISEASE IN CHORNIC DIARRHEA IN ADULT PATIENTS

Muhammad Imranullah, Mohammad Iltaf, Hamid ullah, Adnan ur Rehman, Nizar Khan, Rashid Aslam

ABSTRACT

Introduction: Prevalence of "chronic diarrhea" is between 7% and 14%[1]. The most common causes include irritable bowel syndrome, celiac disease, inflammatory bowel disease, malabsorption syndromes, endocrine disorders, chronic infections, food allergy and medications[2]. The objective of our study is to determine the frequency of celiac disease in chronic diarrhea in adult patients.

Methods and Material: This study was conducted at Gastroenterology Department, Hayatabad Medical Complex Peshawar. This was a cross sectional study which was conducted for the period of one year in which a total of 159 patients were observed by using 9.2% proportion of Celiac disease[10], 95% confidence level and 4.5% margin of error under WHO software for sample size determination. More over non probability consecutive sampling technique was used for sample collection.

Result: Our study shows that 23% patients were in age ranged 16-30 years, 42% patients were in age ranged 31-50 years, 35% patients were in age ranged 51-70 years. Mean age was 32 years with SD ± 1.26. Forty two percent patients were male and 58% patients were female. More over the frequency of celiac diseasewas10% patients. Similar results were found in other studies as well.

Conclusions: We found that celiac disease is more prevalent among patients referring with typical symptoms of malabsorption specially chronic diarrhea than patients with atypical symptoms. Any patient who has classic symptoms of celiac disease should undergo duodenal biopsy, irrespective of whether serologic testing for celiac disease has been performed or was positive. In patients with atypical symptoms, serological tests should be performed followed by endoscopic biopsy. In these patients, routine duodenal biopsy is recommended when endoscopic evaluation is indicated.

Keywords: Celiac disease, chronic diarrhea, adult patients.

INTRODUCTION

Prevalence of "chronic diarrhea" is between 7% and 14%[1]. A wide range of conditions can cause chronic diarrhea; some of the most common causes include irritable bowel syndrome, celiac disease, inflammatory bowel disease, malabsorption syndromes, endocrine disorders, chronic infections, food allergy and medications[2].

Celiac disease is an immune-mediated systemic disorder elicited by gluten containing foods in genetically susceptible individuals, affecting both children and adults, and is characterized by the presence of variable combination of gluten-dependent clinical manifestations, celiac disease specific autoantibodies and enteropathy resulting in chronic diarrhea and leads to a malabsorption syndrome[3,4]. While it was previously thought to be rare, epidemiological studies using sensitive and specific serological tests with biopsy verification established higher prevalence of celiac disease (up to 1:100) in most countries[5,6,7]. Recent reports have shown that celiac disease is a common disorder in North Africa, the Middle East, India and Pakistan[8]. The worldwide distribution of gluten-containing foods, predisposing genotypes, and factors involved in the pathogenesis of celiac disease, are likely to be responsible for the widespread and almost universal emergence of the disorder[13].

In the clinical setting, a wide range of symptoms are observed such as Classical celiac disease: mostly gastrointestinal symptoms (diarrhea, malnutrition, weight loss, steatorrhea and edema secondary to hypoalbuminemia)[15,16,19] andNonclassical*:* in this category, patients may present with gastrointestinal symptoms (abdominal pain, gastroesophageal reflux symptoms, vomiting, constipation, irritable bowel syndrome like symptoms, distension, bloating symptoms, borborygmus); or non gastrointestinal symptoms also known as extraintestinal manifestations (without gastrointestinal symptoms.)[12]. In current practice, the diagnosis of celiac disease rest on a presence of positive celiac disease –specific serology and the concomitant diagnostic intestinal biopsy[8].

The results of this study will help us to highlight the local magnitude of celiac disease among patients with chronic diarrhea as no research work has been done yet locally in this era. The study results will be

[1] Department of Gastroenterology LRH Peshawar
[2] Department of Gastroenterology HMC Peshawar

Address for correspondence:
Hamidullah
District Specialist
DHQ Hospital Nowshera
Cell No. 0312-9399756

compared with already available international data as the literature suggested variable magnitude of celiac disease and on the basis of results we can put forward suggestions for future research work. This will help our already compromised population with chronic diarrhea in reducing the burden of morbidity related to it.[3,4,5]

MATERIAL AND METHODS

This was an Cross-sectional Descriptive study conducted atDepartment of Gastroenterology, Hayatabad Medical Complex Peshawar ,Pakistan from January 2017to December 2017. Overall 159 patients,aged above 16 years of both gender were enrolled. Patients already labeled as celiac disease and those not willing or unfit for Upper gastrointestinal endoscopy were excluded.

DATA COLLECTION PROCEDURE

After permission from the "Hospital Ethical Committee", the study was carried out at gastroenterology and hepatology unit, Hayatabad medical complex, Peshawar. All patients fulfilling inclusion criteria were selected through consecutive sampling from gastrointestinal OPD. Written informed consent was obtained from the patients. History like previous loose motions and duration was obtained. Hematological investigation including blood smear, serum calcium, serum albumin and stool routine examination was done along with celiac serology(IgA anti TTG and IgG anti TTG). Biopsies taken on upper gastrointestinal endoscopy (one biopsy from duodenal bulb and four biopsies from second part of duodenum) were sent for histopathology to departmental histopathology laboratory for confirmation of celiac disease .

All the above mentioned information including name, age, gender and address was recorded in a pre designedproforma.

DATA ANALYSIS

All data collected were entered and analyzed using SPSS version 17. Frequencies were calculated for the qualitative variables like gender and celiac disease. Mean and standard deviation was calculated for quantitative variables like age of the patient. Celiac disease was stratified among age gender to see the effect modifiers. The results were presented as tables and charts.

RESULTS

This study was conducted at Gastroenterology Department, Hayatabad Medical Complex, Peshawar in which a total of 159 patients were observed to determine the frequency of celiac disease in chronic diarrhea in adult patients and the results were analyzed as:.

Age distribution among 159 patients was analyzed as 36(23%) patients were in age ranged 16-30 years, 67(42%) patients were in age ranged 31-50 years, 56(35%) patients were in age ranged 51-70 years. Mean age was 32 years with SD ± 1.26. (as shown in table no 1)

Table No 1: Age Distribution (n=159)

Age	Frequency	Percentage
16-30 years	36	23%
31-50 years	67	42%
51-70 years	56	35%
Total	159	100%

Mean age was 32 years with SD ± 1.26

Table No 2: Gender Distribution (n=159)

Gender	Frequency	Percentage
Male	67	42%
Female	92	58%
Total	159	100%

Table No 3: Celiac Diseases (n=159)

Celiac disease	Frequency	Percentage
Yes	16	10%
No	143	90%
Total	159	100%

Table No 4: Stratification of Celiac Diseases with Age (n=159)

Celiac Disease	16-30 years	31-50 years	51-70 years	Total
Yes	3	7	6	16
No	33	60	50	143
Total	36	67	56	159

Chi square test was applied in which P value was 0.003

Table No 5: Stratification of Celiac Diseases with Gender (n=159)

Celiac Disease	Male	Female	Total
Yes	7	9	16
No	60	83	143
Total	67	92	159

Chi square test was applied in which P value was 0.002

Gender distribution among 159 patients was analyzed as 67(42%) patients were male and 92(58%) patients were female. (as shown in table no 2)

Frequency of celiac diseaseamong 159 patients was analyzed as 16(10%) patients had celiac disease and 143(90%) patients didn't had celiac disease. (as

shown in table no 3)

DISCUSSION

Chronic diarrhea, defined as symptoms persisting for 2 or more weeks, has a myriad of causes including infection, medication, malignancy, and inflammatory conditions. Norovirus, a calicivirus, is associated with acute gastroenteritis in humans, and is spread through the fecal-oral route, either by consumption of contaminated food or water or by direct person-person spread. After an incubation period of 24 to 48 hours, patients often present with acute onset vomiting, watery non-bloody diarrhea with abdominal cramps, and nausea. Dehydration is the most common complication, especially in children and the elderly. Symptoms of this infection usually persist 24 to 60 hours, and the disease is almost always self-limited. However, hospital patient populations have been described with longer mean duration of illness, lasting 80 hours. In the elderly, while acute symptoms abate after three to four days, other symptoms such as thirst, anorexia, lethargy, and vertigo can persist for up to 19 days, leading to delayed recovery and other complications.

Our study shows that 23% patients were in age ranged 16-30 years, 42% patients were in age ranged 31-50 years, 35% patients were in age ranged 51-70 years. Mean age was 32 years with SD ± 1.26. Forty two percent patients were male and 58% patients were female. More over the frequency of celiac diseasewas10% patients. Similar results were found in other studies as:

Celiac disease is present in about 9.2% of the patients presented with chronic diarrhea, while in 12.1% of the patients with typical symptoms of malabsorption[13]. Other studies from Iran also reported that celiac disease is the most common cause of chronic non bloody diarrhea in adults and ranging from 18.5% to 21%[7]. while another study shows the prevalence of celiac disease in patients with chronic diarrhea 15.9%[9].

In another study conducted by Shahbazkhani B1[6] a total of 100 patients (55 men and 45 women) with chronic non-bloody diarrhoea were studied. Mean age of the patients was 31 years. Total serum IgA was in the normal range in all participants. Twenty patients (12/45 women; 8/55 men) had positive IgA EMA. Fourteen of them also had a positive IgA AGA. Celiac disease was diagnosed in 19 patients (19%). Small intestinal Crohn's disease, small intestinal lymphoma and idiopathic aetiology were the next. In patients with celiac disease, after 6 months of a GFD, 15 patients (75%) had a complete clinical response, three patients (15%) had a good response, and one patient (5%) had a partial response. One patient did not follow a GFD.

CONCLUSION

We found that celiac disease is more prevalent among patients referring with typical symptoms of malabsorption specially chronic diarrhea than patients with atypical symptoms. Any patient who has classic symptoms of celiac disease should undergo duodenal biopsy, irrespective of whether serologic testing for celiac disease has been performed or was positive. In patients with atypical symptoms, serological tests should be performed followed by endoscopic biopsy. In these patients, routine duodenal biopsy is recommended when endoscopic evaluation is indicated.

REFERENCES

1. Talley NJ, O'Keefe EA, Zinsmeister AR. Prevalence of gastrointestinal symptoms in general population: a population-based study. Gastroenterology. 2015;102:895–901.
2. Fine KD, Schiller LR. AGA technical review on the evaluation and management of chronic diarrhea. Gastroenterology. 2016;116:1464.
3. Green PHR, Cellier C. Medical progress: celiac disease. New Engl J Med. 2014;357(17):1731–43.
4. Tack GJ, Verbeek WHM, Schreurs MWJ, Mulder CJJ. The spectrum of celiac disease: epidemiology, clinical aspects and treatment. Nature Rev GastroenterolHepatol. 2014;7(4):204–13.
5. Dubé C, Rostom A, Sy R. The prevalence of celiac disease in average-risk and at-risk Western European populations: a systematic review. Gastroenterology. 2015;128(4):57–67.
6. Rubio-Tapia A, Murray JA. Celiac disease. CurrOpinGastroenterol. 2014;26(2):116–22.
7. Nejad MR, Rostami K, Emami MH, Zali MR, Malekzadeh R. Epidemiology of celiac disease in Iran: a review. Middle East J Digest Dis. 2014;3(1):5–12,.
8. Aziz S, Muzaffar R, Zafar MN. Celiac disease in children with persistent diarrhea and failure to thrive. J Coll Physicians Surg Pak. 2016;17:554–7.
9. Wu J, Xia B, von Blomberg BME. Coeliac disease: emerging in China? Gut. 2015;59:418–9.
10. Green PH. The many faces of celiac disease: clinical presentation of celiac disease in the adult population. Gastroenterology. 2014;128(Suppl 1):74–8
11. Nachman F, Nachman F, Mauriño E. Quality of life in celiac disease patients: prospective analysis on the importance of clinical severity at diagnosis and the impact of treatment. Dig Liver Dis. 2013;41:15–5.
12. Marsh MN. Gluten major histocompatibility complex, and the small intestine. Gastroenterol. 2016;102:330–54.
13. Evans KE, McAllister R, Sanders DS. Should we screen for coeliac disease? No. Br Med J. 2015;339:3674.
14. Imanzadeh F, Sayyari AA, Yaghoobi M, Akbari MR, Shafagh H, Farsar AR. Celiac disease in children with diarrhea is more frequent than previously suspected. J PediatrGastroenterolNutr. 2017;40(3):309–11.

15. Nejad MR, Rostami K, Pourhoseingholi MA. Atypical presentation is dominant and typical for coeliac disease. J Gastrointestinal Liver Dis. 2016;18(3):285–91.

16. Juckett G, Trivedi R. Evaluation of chronic diarrhea. Am Fam Physician. 2013; 84:1119.

17. Charles MD, Holman RC, Curns AT. Hospitalizations associated with rotavirus gastroenteritis in the United States, 1993-2002. Pediatr Infect Dis J. Jun 2016;25(6):489-93.

18. Coffin SE, Elser J, Marchant C. Impact of acute rotavirus gastroenteritis on pediatric outpatient practices in the United States. Pediatr Infect Dis J. Jul 2017;25(7):584-9.

19. Girard MP, Steele D, Chaignat CL, Kieny MP. A review of vaccine research and development: human enteric infections. Vaccine. Apr 5 2014;24(15):2732-(5) 486 – 9 .

20. Guandalini S. Treatment of acute diarrhea in the new millennium. J PediatrGastroenterolNutr. May 2017;30(5):486-9.