

DIARRHOEA IN PREDOMINANT IRRITABLE BOWEL SYNDROME AND CELIAC DISEASE

Sheema Khan, Bughdad Khan, Salim Iqbal

Department of Medicine, Khyber Teaching Hospital, Peshawar - Pakistan

ABSTRACT

Objective: To find the frequency of celiac's disease in patients previously treated for Irritable bowel syndrome by histological examination of lower duodenal biopsy specimens.

Material and Methods: This was a cross sectional study, including fifty patients, conducted at Department of Medicine, Khyber Teaching Hospital, Peshawar, Pakistan from February 2013 to May 2013. A total of 50 patients were included in the study with a mean age of 30 years. Oesophagogastrodeudonoscopy was performed and lower deudonal biopsies were taken, all specimens were sent in formalin for histopathology examination to screen for villous atrophy.

Results: In this study fifty patients previously treated for Irritable bowel syndrome were evaluated with duodenal biopsy for celiac's Disease. Twelve patients were found to have biopsy changes consistent with celiac's disease, resulting in prevalence of 24%.

Conclusion: Celiac's disease can cause malabsorption and is a pre-cancerous is condition. A high degree of suspicion is required among physicians for early diagnosis of coeliacs disease and prevention of malignancy.

Key Words: Celiac's disease, Irritable bowel syndrome, histopathology, biopsy.

This article may be cited as: Khan S, Khan B, Iqbal S. To find the frequency of celiac disease in patients previously treated for diarrhoea predominant irritable bowel syndrome. *J Med Sci* 2018; 26: (1) 46-49.

INTRODUCTION

Irritable bowel syndrome is a common functional disorder of the gut that comprises a combination of symptoms such as abdominal pain often cramping in nature and altered bowel habit eg constipation and or diarrhea and needs to be managed on long term by the gastroenterologist as it runs a chronic course¹. 10-20% of people in general population experience symptoms of Irritable bowel syndrome at sometime in thier lives and is the commonest cause of absence from work after common cold².

The symptoms of Irritable bowel syndrome such as cramping abdominal pain and loose stools are also present in many organic gut disorders such as celiac's disease, tropical sprue, inflammatory bowel disease and microscopic and eosinophilic colitis³. Pain in Irritable bowel syndrome is either located in the right or

left iliac fossa, its typically cramping in nature and the patients complains of a sense of an incomplete evacuation of stools⁴. However weight loss, large volume diarrhea, bloody diarrhea, nocturnal diarrhea, fever and steatorrhoea are all red flags and indicate organic disease rather than Irritable bowel syndrome and the above should always prompt the gastroenterologist to conduct a series of investigations to rule out organic gut diseases as inflammatory bowel disease, coeliac disease or neoplasia in elderly patients.⁵

In the absence of biological disease efforts have been made to standardize the diagnosis of Irritable bowel syndrome using symptom based criteria⁶.

- Manning's criteria-In 1978 Manning et al formulated a symptom complex suggestive of irritable bowel syndrome in an attempt to simplify it's diagnosis. These include relief of crampy abdominal pain with defecation, looser and more frequent stools with the onset of pain, passage of mucus and a sense of incomplete emptying⁷.
- Rome criteria- An international team published a consensus definition called the Rome criteria in 1992, and was recently revised in 2005⁸. Irritable bowel syndrome was defined on the basis of symptoms as recurrent abdominal pain or

Dr. Sheema Khan (Corresponding Author)
Assistant Professor
Department of Medicine, Khyber Teaching Hospital,
Peshawar - Pakistan
Cell: +92-300-5942690
Email: sheemakhan459@gmail.com

Date Received: February 18, 2017

Date Revised: October 27, 2017

Date Accepted: January 20, 2018

discomfort with altered stool pattern, without the red flag symptoms as nocturnal diarrhoea, blood in stools, or weight loss⁹. With the available data, The American Gastroenterological Association issues a consensus statement that the diagnosis of Irritable bowel syndrome should be based upon the identification of positive symptoms as in the Rome criteria and excluding in a cost effective manner other conditions with similar clinical presentation, as adult celiac's disease.

Samuel Gee in 1888, first described celiac's disease or "Gluten Sensitive Enteropathy"¹⁰. It can present in the 40's with typical symptoms of chronic diarrhoea or flatulence but occurs typically in infants at weaning¹¹. In adults Gastrointestinal symptoms are less dramatic and the patient may largely ignore these non-specific symptoms due to their chronicity and mild nature¹². The diagnosis of celiac's disease typically requires both of the following:

- The presence of characteristic histological changes on small bowel biopsy in a symptomatic individual.
- Complete resolution of symptoms on a gluten free diet.

In addition to the above two points serological tests provide supportive evidence, to the diagnosis of coeliac disease, they also revert to normal on stopping consumption of gluten in diet.¹³ In patients with Irritable bowel syndrome increased levels of anti-tTG and anti-gliadin antibodies Ig-A or Ig-M was found in about 12.5% of patients¹⁴.

Similarly, genetic predisposition to coeliac disease determined by testing HLA-DQ2/DQ8 was also significantly raised (50%) in Irritable bowel syndrome patients as compared to normal population.¹⁵ Therefore serological tests and genetic markers were excluded from the study and diagnosis was based solely on histological findings of lower duodenal mucosa. This topic discusses the frequency of adult celiac's disease in patients previously treated for Irritable bowel syndrome.

MATERIAL AND METHODS

This study was conducted at Medical A Ward, Khyber Teaching Hospital, Peshawar, Pakistan from February 2013 to May 2013. All patients having diarrhea, flatulence, altered bowel habit and constipation, who were previously treated for functional bowel disorders were included in the study. Patients who were previously evaluated with lower duodenal biopsies, those with fresh bleeding per rectum, weight loss, steatorrhea, nocturnal diarrhoea, fever, positive serological markers for coeliac's disease and those diagnosed with organic

diseases such as inflammatory bowel disease or intestinal tuberculosis were excluded from the study.

The preliminary work up included a detailed history and physical examination. Systemic examination was performed to look for signs of malabsorption as wasting, glossitis, angular stomatitis and dependent edema. Upper gastrointestinal endoscopy procedure was explained to the patient and an informed consent was taken, after which an esophagogastroduodenoscopy was performed and lower duodenal biopsies were taken. All specimens were sent in formalin for histopathological examination to screen for villous atrophy.

RESULTS

A total of fifty patients were included in the study. Their age was between 20-40 years with a mean of 30 years. Out of fifty patients 35(70%) were females and 15(30%) were males. The male to female ratio is 1: 2.33. Twelve patients (24%) were found to have histopathology of duodenal biopsy consistent with celiac's disease. Out of these 5(10%) of patients had signs of malabsorption as wasting, angular stomatitis, glossitis etc. The rest i.e. 7(14%) of patients had no overt signs of malabsorption and only minimal gastrointestinal symptoms of diarrhea, bloating and altered bowel that are refractory to treatment with antispasmodics or antibiotics.

DISCUSSION

Celiac's disease is a small bowel disorder characterized microscopically by mucosal inflammation, villous atrophy and crypt hyperplasia on exposure to dietary gluten which shows improvement after withdrawal of gluten from diet.¹⁶ Primarily affected is the white population northern European descent. In 1950's studies suggested that the prevalence of celiac's disease ranged between 1:4000 and 1:8000 due to unrecognition of oligosymptomatic mild forms of celiac's disease. In 1970's, biopsy verification suggested a higher prevalence of 1:300 to 1:500 in most western countries¹⁷. Studies describe an increasing prevalence of celiac's disease with increasing age. An Italian survey documented that approximately 15% of newly diagnosed patients are older than 65 years and these patients suffer symptoms for 11-19 years prior to diagnosis¹⁸.

Celiac's disease has a number of non-gastrointestinal symptoms and may present in a variety of ways as psychiatric, neurological, renal or bone diseases¹⁹. In some patients the non-gastrointestinal features are the presenting symptoms and should prompt investigations by the gastroenterologist. These include neuropsychiatric disease as peripheral neuropathy, ataxia, depres-

sion or epilepsy²⁰, arthritis iron deficiency, metabolic bone diseases and renal diseases as glomerular Ig A deposition²¹. A small increase in overall mortality in patients with celiac's disease was noted by a number of observational studies. This increase was mainly due to cardiovascular disease and malignancy²². The most common malignancy is lymphoma others being esophageal squamous cell carcinoma, small intestinal adenocarcinoma, colorectal and hepatocellular cancers²³.

Adult celiac's disease and irritable bowel syndrome may have similar presentations. The mild type of celiac's disease having only a few symptoms as loose stools the frequency of which is not high so as to alarm the patient with occasional bloating attributed to indigestion, is difficult to differentiate from irritable bowel syndrome. Both tend to affect young males and females. The diagnosis of irritable bowel syndrome should be based upon the identification of positive symptoms consistent with the condition and absence of alarm symptoms as weight loss, rectal bleeding, anaemia²⁴, fever. Furthermore the symptoms should not be nocturnal, progressive²⁵ or leading to malabsorption syndrome. In our study fifty patients with abdominal pain and altered bowel habit for a long time were evaluated for celiac's disease with histological examination of biopsies obtained from lower duodenum. The incidence of twelve patients (24%) with celiac's disease demonstrates that prevalence has increased as histological examination of biopsy specimen taken from lower duodenum has becoming widely available especially in patients with minimal or no symptoms. Screening patients with minimal symptoms for a long time is now advocated because such a strategy could possibly result in correction of nutritional deficiencies and decreases the risk of malignancy. Furthermore screening should be performed in high risk groups as first degree relatives of patients with celiac's disease, autoimmune thyroiditis, type 1 diabetes, Downs syndrome, Turners syndrome and Ig A deficiency²⁶, as these are often associated with coeliac's disease.

Serological tests for celiac's as antibodies against tissue transglutaminase (anti- tTg) is a highly sensitive and specific test²⁷, but is also found positive in a high percentage of irritable bowel syndrome patients having latent or potential celiac' disease. It is usually followed by histological examination of small bowel while the patient is on a gluten diet. Multiple biopsies should be taken from the duodenum and duodenal bulb. The cornerstone of celiac' disease treatment is complete elimination of gluten from diet for life. Gluten is found in wheat, rye and barley. Maintaining a gluten free diet is a challenging task that requires life style adjustment.

CONCLUSION

Early recognition of celiac disease can reduce malabsorption, which can lead to cancerous condition.

RECOMMENDATIONS

In the past, celiac's disease was believed to exclusively affect people of European origin. Screening has shown that celiac's disease is also common in developing countries in both general population and in groups at risk. Therefore an increased awareness and clinical suspicion are increased in physicians to recognize variable presentations of celiac's disease.

REFERENCES

1. Drossman DA. A Functional Abdominal Pain Syndrome. 2004; 2: 353-68.
2. Camelleri M, Mayer EA, Drossman DA. A technical review of irritable Bowel Syndrome. Gastroenterology. 2002; 123: 2108-24.
3. Shuster MM. Disgnostic Evaluation of Irritable Bowel Syndrome. Gastroenterol Clin North America. 1991; 20:269-72.
4. Shwarbrick ET, Hegarty JE, Bat L. Site of Pain from Irritable Bowel. Lancet. 1980; 2:443-48.
5. Jhones R, Lydeard S. Irritable Bowel Syndrome in the general population. British Medical Journal. 1992; 300:87-91.
6. Manning AP, Thompson WG, Heaton KW. Towards positive Diagnosis of Irritable Bowel Syndrome. British Medical Journal. 1978;2:653-69.
7. Tally NJ, Phillips SF, Melton LJ. Diagnostic value of Manning's criteria in Irritable Bowel Syndrome. GUT. 1990;31:77-85.
8. Shumalson MW, Chang L. Diagnostic approach to patients with Irritable Bowel Syndrome. American Journal of Medicine. 1999;107:205-25.
9. Vanner SJ, Depew wt, Paterson WG . Predictive value of the Rome criteria for diagnosis of Irritable Bowel Syndrome. 1994;94:2912-35.
10. Booth CC. History of coeliac's disease. British Medical Journal. 1989;298:527-31.
11. Collin P, Reunala T, Pukalla E. Coeliac's disease associated disorders and survival. Gut. 1994;35:1215-26.
12. Lavinson CR, Hartman C, Morgensterns S. The role of duodenal bulb biopsy in the diagnosis of Coeliac's disease. Journal of clinical Gastroenterol. 2011; 45:260-72.
13. Green PH, Cellier C. Coeliac's Disease. North England Journal of Medicine. 2007;357:1731-37.
14. Danuta D, Marek K, Kowalsta E. The prevalence of coeliac's disease in patients with IBS and its subtypes. Prz Gastroenterol. 2016,11;276-81.
15. Magraritte J, Jeanine P, Babron MC, Bourgey M. HLA-DQ relative risks in a study of the European Gen-

- gens cluster on coeliacs disease. Tissue Antigens. 2004;63;562-67.
16. Maki M, Musalahti K, Kokkonen J. Prevalence of Coeliac's disease in Finland. North England Journal of Medicine. 2003;348:2517-22.
 17. Vilppula A, Collin P, Maki M. Undetectable Coeliac's in the elderly. Digestive and Liver Diseases. 2008; 40:809-13.
 18. Furguson A, Arranz E, Mahony S. Clinical and pathological spectrum of Coeliac's disease. Gut. 1993;34-50.
 19. Chin RL, Sander HW, Branagan TH. Coeliac's Neuropathy. Neurology 2003;60:1581-92.
 20. Lubrano E, Ciacci C, Ames PR. The arthritis of Coeliac's disease in adult patients. British Journal of Rheumatol. 1996;35:1314-24.
 21. Logan RF, Rifkind EA, Turner ID. Mortality in Coeliac's disease. Gastroenterology. 1989;97:265-69.
 22. West J, Logan RF, Smith CJ. Malignancy and mortality in patients with Coeliac's disease. British Medical Journal. 2004;329:716-20.
 23. Longstreth GF, Thompson WG, Chey WD. Functional bowel disorders. Gastroenterology. 2006;130: 1480-92.
 24. Hammer J, Tally NJ. Diagnostic criteria for Irritable Bowel Syndrome. American Journal of Medicine. 1992;107:109-15.
 25. Troncone R, Mawrano F, Rossi M. Ig A antibodies to tissue transglutaminase. Journal of Pediatrics. 1999;134:166-72.
 26. Fasano A, Berti I, Gerarduzzi T. Prevalence of Coeliac's disease in at risk and not at risk groups in USA. American journal of gastroenterology. 2001;96: 112-21.
 27. Ciclitira PJ, King AL, Fraser JS. A technical review on Coeliac's sprue. Gastroenterology. 2001;120: 1526-31.

CONFLICT OF INTEREST: Authors declare no conflict of interest

GRANT SUPPORT AND FINANCIAL DISCLOSURE NIL

AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

Khan S: Data collection Data analysis.

Khan B: Statistical analysis.

Iqbal S: Data analysis bibliography.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

The Journal of Medical Sciences, Peshawar is indexed with WHO IMEMR (World Health Organisation Index Medicus for Eastern Mediterranean Region) and can be accessed at the following URL.

<http://www.who.int/EMRJorList/details.aspx?docn=4468>