

Frequency of Celiac Disease in anemic patients presenting at Federal Government Poly Clinic Hospital, Islamabad, Pakistan

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Objective: To look for the frequency of Celiac disease in all anemic patients in our local scenario.

Methodology: This descriptive cross sectional study was conducted at Federal Government Poly Clinic, Postgraduate Medical Institute, Islamabad, Pakistan from January 1, June 30, 2019 and included 39 consecutive patients of anemia.

Results: Out of 39 patients, 21(53.8%) were females and 18(46.2%) males. The mean age was 34 ± 2.5 years (range 14-85). We found that

21(53.8%) patients had macrocytic anemia and 15 (38.46%) had microcytic anemia. Celiac disease was present in 11(28.2%) patients.

Conclusion: Celiac disease is usually missed during the work up of anemia. The testing for Celiac Disease should always be included in the work up of anemia regardless of the age of the patients. (Rawal Med J 202;45:51-53).

Keywords: Celiac disease, pernicious anemia, iron deficiency anemia.

INTRODUCTION

Celiac disease is a chronic small-intestine enteropathy resulting from contact of gluten containing diet with small intestine mucosa.¹ It is an autoimmune disorder against the small bowel villi which occurs in genetically susceptible persons. The reported incidence is from 0.5% to 1% in many parts of the world.² These patients can present with clinical manifestation of celiac disease like diarrhea, steatorrhea, weight loss, growth failure and extra-intestinal symptoms such as anemia and osteoporosis or can be completely asymptomatic.³

Generally, celiac disease is considered a disease of children but on many occasion it is not diagnosed until adulthood or even some sometimes in elderly patients.⁴ Anemia is one of the major complications of the celiac disease as atrophy of the villous part of the intestine results defective and no absorption of the micronutrients such as Iron and vitamin B 12.⁵ These leads to iron deficiency anemia as well vitamin B 12 deficiency. Celiac disease is accounted as a cause of Iron deficiency anemia in up to 7% of anemia cases.⁶ Clinical practice guidelines from American Academy of Family Physicians and the British Society of Gastroenterology suggest that patients who are anemic and undergoing workup, celiac disease must be included in the differential diagnosis.⁷ The purpose of this study was to include

testing for celiac disease in all patients undergoing for workup of anemia.

METHODOLOGY

This descriptive cross sectional study was conducted at Federal Government Poly Clinic, Postgraduate Medical Institute, Islamabad from January 1, June 30, 2019. It included 39 consecutive adult patients of anemia. Patients with acute hemorrhagic such as bleeding wounds, trauma and patients with malignancy were excluded from the study. Patients undergoing emergency surgery for other reason and their workup showed anemia were also excluded from the study.

Detailed history and examination was performed and appropriate investigations were done. The investigation included Complete blood count with leukocyte differential and peripheral smear, RBC indices, Reticulocyte count, Liver Function test, Renal function test, Bone marrow examination (in selected patients), Serum iron concentration, Total iron-binding capacity (TIBC), Antitransglutaminase, Serum vitamin B-12, Serum folate, electrolytes, heavy metal studies, endoscopic examination and biopsy.

Statistical analysis: Data were collected on specified proforma and analysis was done on SPSS version 21.

RESULTS

Out of 39 patients, 21(53.8%) were females and 18(46.2%) males. Mean age was 34 ± 2.5 years (range 14-85). We found that 21(53.8%) patients had macrocytic anemia and 15(38.46%) had microcytic anemia. Celiac disease was present in 11(28.2%) patients. The result of investigations are shown in the Table. There was no mortality.

Table. Investigation Result (n=39)

| Investigation | | Number of patients | Percentage |
|-----------------------------------|--------------|--------------------|------------|
| Anemia | Mild 8-10 | 15 | 38.4 |
| | Moderate 6-8 | 11 | 28.2 |
| | Severe <6 | 13 | 33.3 |
| Anti TTG Antibodies | IgA | 4 | 10.25 |
| | IgG | 6 | 15.3 |
| Microcytic Anemia | | 15 | 38.4 |
| Iron Deficiency Anemia | | 15 | 38.4 |
| Macrocytic Anemia | | 21 | 53.8 |
| Vitamin B Deficiency | | 13 | 33.3 |
| Folate Deficiency | | 8 | 20.5 |
| Biopsy Positive of Celiac Disease | | 11 | 28.2 |

DISCUSSION

Celiac disease leads to inflammation of the gastrointestinal tract mucosa causing inadequate digestion and malabsorption of food nutrients.⁸ It is more common in children but can also present in 2nd to 4th decade of life however fewer cases are also reported in elderly people as well.⁹ Its slightly more common in females as compared to males.¹⁰ Patients with celiac disease may present with complaints of chronic diarrhea, abdominal pain, flatulence, fatigue, weight loss and even anemia.¹¹ They may also have osteoporosis due to Vitamin D deficiency, slow or stunted growth¹² or skin disorder like dermatitis herpetiformis.¹³ There may abdominal distension because of ascites due to hypoproteinemia and muscle wasting, pallor, ecchymosis skin rash and neuropathy.¹⁴

Celiac disease is usually diagnosed by IgA, and anti tissue transglutaminase antibodies (TTG). However, IgG TTG should be performed with it in children as they can be IgA deficient and it will give false negative result.¹⁵ Other antibodies include

endomysial IgA and reticulin IgA which correlate with degree of mucosal damage.¹⁶ Upper GI endoscopy with biopsy shows villous atrophy with increase collection of lamina propria with proliferation of plasma cells and lymphocytes.¹⁷ Management is primarily dietary. Patient is put on gluten free diet and asked to avoid oat, barley, wheat which rich in gluten.¹⁸ We should also manage other manifestations like anemia, vitamin D deficiency and skin lesions.¹⁹

We included 39 patients for work up of anemia and there was slight preponderance of females. The mean age in our study was 34 years. In our study, 53.8% of patients had macrocytic anemia while 38.46% patients had microcytic anemia. IgA TTG was positive in 10.25 % while IgG TTG was positive in 15.3%. Biopsy was positive for celiac disease was positive in 28.2% patients.

The frequency of diagnosed patients of celiac disease were more in our as compared to other studies. Celiac disease is found in 1% of world population.²⁰ The reason could be referral of these anemic patients not diagnosed at primary health center and they did not respond to Iron, B12 and folic acid therapy. Spencer et al from USA reported that primary health care physicians are under testing for celiac disease and as much as 50% of the patients are missed.²¹ This is the reason for elderly patients coming for work up of anemia in our study and such a late diagnosis of celiac disease.

There were several limitations to our study. First the sample size was relatively small, second we included consecutive patients of anemia presenting for their workup, third most of the patients were referred after being initial work up of anemia. Nevertheless, the result of our study lead us to conclude that celiac disease is under tested in our set up and it should always be included in the work up of anemia regardless of the age of the patients for early diagnosis and management of patients of this disease.

CONCLUSION

Celiac disease is usually it is missed during the work up of anemia. The testing for this disease should always be included in the work up of anemia regardless of the age of the patients.

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