



**Al-Nahrain University
College Of Medicine**



Clinical Manifestations in Patients with Celiac Disease

**Research submitted to department of medicine /college of medicine/
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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

وَمَا تَوْفِيقِي إِلَّا بِاللَّهِ عَلَيْهِ

تَوَكَّلْتُ وَإِلَيْهِ أُنِيبُ

صدق الله العلي العظيم
سورة هود (من الآية 88)

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DEDICATION

To My...

Parents & sisters & brothers,

For their ever support...

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ABSTRACT

Introduction: Celiac disease is an inherited autoimmune disease. The symptoms are triggered by “gluten”, In celiac the body’ immune system responds abnormally to gluten, resulting in inflammation and damage to the lining of the small intestine, the most common typical symptoms are abdominal pain, dyspepsia, bloating, diarrhea, and most common Atypical symptoms are pallor and bone disease, investigation by {TTGIgA} {IgG} serology and by endoscope, treatment by Gluten free diet.

Objective: To define the clinical manifestation in patients with celiac diseases.

Patients and methods: This is a descriptive cross-sectional study conducted on celiac disease individuals AL-Imamain AL-Kadhimiyyain teaching hospital ,total of 30 individuals had been included in the study sample from age 10 to 69 years.

Results: This study had included 30 individuals with celiac disease, the female more than male, age group between 30-39 years is more common, the abdominal pain was more common typical symptom and pallor was more common atypical symptom.

Conclusion: In Iraq the celiac disease was seen more commonly age group between 30 to 39 and more common in females.

INTRODUCTION

Celiac disease is an inherited autoimmune disease. The symptoms are triggered by “gluten”, In celiac disease, the body’ immune system responds abnormally to gluten, resulting in inflammation and damage to the lining of the small intestine, and reduced absorption of iron, calcium, vitamins A, D, E, K, and folate.¹ Celiac disease is also can be defined as an autoimmune disease that affects the small intestine in persons with a genetic predisposition to infection , Lung disease may occur at any age from childhood to late aging.² Some people with celiac disease have no symptoms at all, but still test positive on the celiac disease blood test. A few others may have a negative blood test, but have a positive intestinal biopsy. However, all people with celiac disease are at risk for long-term complications³

Symptoms of Celiac Disease

Digestive symptoms are more common in infants and children. The most common symptoms found in children³:

- Abdominal bloating and pain
- Chronic diarrhea
- Vomiting
- Constipation
- Pale, foul-smelling, or fatty stool
- Weight loss
- Fatigue
- Irritability

- Dental enamel defects of the permanent teeth
- Delayed growth and puberty
- Short stature
- Failure to thrive
- Attention Deficit Hyperactivity Disorder (ADHD)

Adults are less likely to have digestive symptoms, with only one-third experiencing diarrhea. Adults are more likely to have³:

- Iron-deficiency anemia
- Fatigue
- Bone or joint pain
- Arthritis
- Osteoporosis or osteopenia (bone loss)
- Liver and biliary tract disorders (transaminitis, fatty liver, primary sclerosing cholangitis, etc.)
- Depression or anxiety
- Peripheral neuropathy (tingling, numbness or pain in the hands and feet)
- Seizures or migraines
- Missed menstrual periods
- Infertility or recurrent miscarriage
- Dermatitis herpetiformis (itchy skin rash)

The symptoms of celiac disease are often similar to those of other diseases, including irritable bowel syndrome, chronic fatigue syndrome and fibromyalgia, which often make diagnosis difficult. New blood screening tests are improving the speed and accuracy of the diagnosis of celiac disease. The two most effective blood tests for screening celiac disease are the IgA anti-transglutaminase antibody test (tTG) and the IgA anti-endomysial antibody test (EMA). Some people with celiac disease are deficient in immunoglobulin A (IgA), so screening should also include measurement of their serum IgA concentration. Following a positive blood test, an intestinal biopsy (tissue sample) is required to make a definitive diagnosis. A person should not go onto a gluten-free diet until the blood test and biopsy have been completed, to ensure an accurate diagnosis.⁴

Management

Celiac disease is usually treated by simply excluding foods that contain gluten from diet⁵, i.e. gluten-free diet. This prevents damage to the lining of your intestines (gut) and the associated symptoms, such as diarrhea and stomach pain. You must give up all sources of gluten for life, your symptoms will return if eat foods containing gluten, and it will cause long-term damage to your health.

Foods containing gluten (unsafe to eat)

Patients having celiac disease are no longer be able to eat foods that contain barley or wheat. If a person has celiac disease, should not eat the following foods, unless they're labeled as gluten-free versions:

- Bread
- Pasta

- Cereals
- Biscuits or crackers
- Cakes and pastries
- Pies

Gluten-free foods (safe to eat)

Patients with celiac disease can eat the following foods, which naturally don't contain gluten:

- Most dairy products, such as cheese, butter and milk
- Fruit and vegetables
- Meat and fish (although not breaded or battered)
- Potatoes
- Rice and rice noodles
- Gluten-free flours, including rice, corn, soy and potato

Aim of Study

The aim of this study is to define the clinical manifestation in patients with Celiac diseases.

PATIENTS AND METHODS

Study setting and design

This is a descriptive cross-sectional study conducted on celiac disease individuals AL-Imamain AL-Kadhimiain teaching hospital during the period from September to end of December 2018..

Selection of study sample

It involved those with celiac disease in department of Gastro-duodenoscopy (OGD).A total of 30 individuals had been included in the study sample from 10 to 69 years involved 22 female and 8 male.

Baseline Assessment

Data was collected through a direct interview with the participants .A verbal consent was taken. Through information concerning the patient condition was obtained by the questionnaire , from the history and investigation.

Data collection:

Our study was on take celiac patient from Gastro-duodenoscopy (OGD) department, ask them about baseline data collection include patient sex, age, symptoms, investigation (TTGIgA) (IgG) and endoscope.

RESULTS

This study had included 30 individuals with celiac disease; the age of them is ranging between 10 to 69 years.

Regarding the sex distribution of the sample ,it seemed that the percentage of women was higher than men , and the age group between 30-39 years was more common have celiac disease , while the age group between 50-59 is less have celiac disease .Table 1 outlines the demographic characteristics of the sample.

Table 1: Age and sex distribution of the sample

Character	Groups	Number	Percentage
Age group (in years)	10-19	5	16.6%
	20-29	7	23.3%
	30-39	9	30%
	40-49	5	16.6%
	50-59	1	3.3%
	60-69	3	10%
Sex	Males	8	26.6%
	females	22	73.4%
Total		30	100%

Table 2 has been designed to show the results of tests, it seemed that the number of patients with serology tests positive was **27** patients divided into **20** female and **7** males and those with negative serology results was **3** divided into **2** female and **1** male. All patients have positive results by endoscopy (confirmatory test). The sensitivity of the serology test is 90% & it is calculated according to following equation:

$$\text{Sensitivity} = \frac{\text{Number of True Positive Cases}}{\text{Number of True positive} + \text{Number of False Negative}}$$

Table2: Results of serology test in study sample

Result	Number	Percentage
Positive	27	90%
Negative	3	10%
Total	30	100%
Sensitivity of Serology = 90%		

Table 3 has been designed to show the percentage symptoms in celiac disease, it seemed that the abdominal pain was more common typical symptom and Pallor was more common atypical symptom.

Table3: Frequency distribution of disease symptoms in study sample

Type of Symptom	Name of Symptom	Number	Percentage
Typical	Abdominal pain	18	60%
	Dyspepsia	13	43%
	Bloating	10	33.3%
	Diarrhea	9	30%
	Vomiting	1	3.3%
Atypical	Pallor	11	36%
	Bone disease	4	13.3%
	Anxiety	3	10%
	Neurological	2	6.6%

Table 4 & Figure1 have been designed to show the distribution of typical and atypical symptoms as main clinical manifestation of celiac disease; it seemed that the percentage of typical symptoms was more common.

Table4: Frequency distribution of type of main clinical manifestation in study sample

Type of main symptom	Number	Percentage
Typical	22	73.3%
Atypical	8	26.4%
Total	30	100%

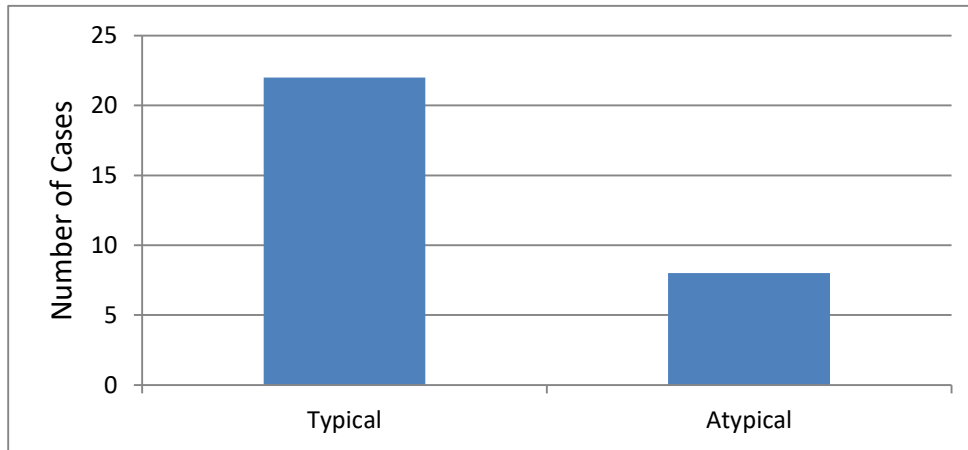


Figure 1. Frequency distribution of main symptoms in the sample

Table 5 designed to show the percentage of grade of MARSH in typical and atypical symptom of celiac disease. it seemed that the percentage of MARSH **A** was more common in typical and MARSH **B** was more common in Atypical.

Table5: Difference in distribution of grade of MARSH* in typical and atypical symptoms of celiac disease

Type of Symptom	MARSH Grade	Number	Percentage
Typical	A	13	43%
	B	6	20%
	C	3	10%
Atypical	A	1	3.3%
	B	5	16.6%
	C	2	6.6%
Total		30	100%

* A: partial villous atrophy; B: subtotal villous atrophy; & C: total villous atrophy

DISCUSSION

Thirty subjects were recruited for this study ,composed from (22) females and (8) males. The age group of this study was between 10 to 69 years, the commonest age have celiac disease was between (30-39) years.

The comparison between our study & other studies according to symptoms

the most common symptoms in this study where typical (73%), the commonest was abdominal pain(60%) , the others was dyspepsia (43%) ,bloating (33.3%) , diarrhea (30%) ,vomiting (3.3%) .while Atypical (26%) the commonest was pallor (36%), bone disease (13.3%),anxiety (10%),neurological symptoms (6.6%). another study by **Ganji A et al {6}** the commonest were the typical symptoms which was dyspepsia(24.6%) , the others symptom where diarrhea (20%) ,bloating (7.2%) ,weight loss (7.2%),constipation (3.1%), commonest Atypical symptom was pallor (60%) , the other symptoms was bone diseases(60%) , neurological symptoms (27.7%), skin diseases(27.7%). another study by **Albrady A et al {7}** the typical symptoms where most common ,the commonest was abdominal pain(56%) ,the other included abdominal distension (48.7%), diarrhea(37.8%) weight loss(45.2%), the commonest Atypical symptoms was pallor (50.8%) , bone pain (33%).in another study by **Rampertab S.D et al {8}** the typical symptoms were most common which was diarrhea(46.7%) and the Atypical symptoms where pallor (10%),bone disease (7.1%).

The comparison between our study and other studies according to sex

In this study the sample was 30, the percentage of female more than male, the female was 22 (73%), while the male was 8 (26.6%). In study by **Ganji A et al { 6}** the sample was 193 the percentage of female more than male ,the

female was **132 (68.4%)**, while the male was **61 (31.6%)**. another study by **Albrady A et al {7}** the sample was **669** the percentage of female more than male , the female was **501 (74.8%)** while the male was **167 (24.9%)**. another study by **Rampertab S.D et al {8}** the total sample was **590** the percentage of female more than male the female was **401 (67.9%)**, while the percentage of male was **189 (32%)**.

The comparison between our study and another studies according to age

The age group of this study was between **10 to 69** years, the commonest age was between **(30-39)** years. In study by **Ganji A et al {6}** the commonest age between **19 to 45**. another study by **Albrady A et al {7}** the age group was between **(1-50)** years the commonest age was between **(18-50)** years. Another study by **Rampertab S.D et al {8}** the age group was between **(16-83)** years, the commonest age between **26 to 60** years. In present study the different between typical and atypical is significant (0.010).

In our study the number of the patients which is the result serology tests positive was **27** patients divided into **20** female and **7** males and All patients have positive results by endoscopy (confirmatory test). The sensitivity of the serology test is 90%. The percentage of grade of MARSH in typical and atypical symptom of celiac disease, it seemed that the percentage of MARSH **A** was more common in typical and MARSH **B** was more common in Atypical. Un cooperation of some patients and refusal to undergo investigations.

CONCLUSIONS

- In Iraq the celiac disease was seen more commonly age group between 30 to 39 and more common in females.
- Abdominal pain, dyspepsia, bloating, diarrhea, pallor, were most common presentation in this area.

RECOMMENDATIONS

- Monitoring of the nutritional status ,do blood tests and use of appropriate gluten-free diet.
- Do another testes such as endomysial AB and antidymen peptide.

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Questionnaire

Personal information

Name:

Age:

Sex:

Symptoms\signs :

Abdominal pain

Bloating

dyspepsia\indigestion

Diarrhea

constipation

pallor

Weight loss

weakness

anxiety

bone \joint pain

muscle cramps

skin rash\ erythema

Easy bruising

failure to thrive

hair loss

nail changes

chelitis \angular stomatitis

Oral ulcer

headach [chronic]

Nausea\vomiting

Fatigue

other autoimmune dieases :

addision dieases

arthritis

type1 dibetic mellitus

hashimoto thyroditis

Serology :

TTGIgA AB

IGg

Endomysial AB

Screen {blood test }:

CBC :

HB

MCV

WBC

Platelat

Ferritin

serum calicum

VitD3

Endoscopy finding D2 :

normal

abnormal

Biopsy histopathology

MARSH