

## Research Article



## Celiac Disease in Adults: Report of 73 Cases Features of Eastern Algeria

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### ABSTRACT

The diagnosis of adult celiac disease is based on clinical, serological and histological arguments. Clinically the picture is very variable. This work aims to determine the symptoms, associated pathologies and the features of this disease in the population of eastern Algeria. This representative sample of 73 patients is characterized by a predominance of women, a disease onset between 20 and 40 years and no asymptomatic form. There was a diversity of signs and associated pathology, a variety of digestive symptoms represented mainly by chronic diarrhea and abdominal pain, extra-digestive symptoms represented mainly by asthenia and weight loss in addition to biological disorders and a series associated pathologies namely: anemia, neurological damage, the disease of the mouth, liver cirrhosis, insulin-dependent diabetes and esophageal varicose veins.

**Keywords:** Adults, Associated pathology, Celiac disease, Eastern Algeria, Symptoms.

### INTRODUCTION

Celiac disease is a chronic inflammatory autoimmune enteropathy caused by a food antigen gluten gliding. Diagnosis of the disease is based on clinical, serological and histological findings.

Clinically, the picture is very variable.<sup>1</sup> It is not only an intestinal disease, but a multi- system disease as well.<sup>2,3</sup>

Adolescent and adult Celiac disease is clinically manifested so fickle and variable, plus a very variable digestive symptoms (i.e. Diarrhea, constipation, vomiting, flatulence and pain) is possibly added to extra intestinal symptoms: In addition, patients may be asymptomatic or present with severe clinical picture. In addition, there are variations in clinical expression depending on the stage of life of patients.<sup>4</sup>

To identify the clinical picture, associated pathology and the peculiarities of this disease in our population, we report the results of a cross-sectional study in the region of eastern Algeria.

### Objectives

The objective of this study is to identify the symptoms and specific aspects of celiac disease in the population of eastern Algeria.

### MATERIALS AND METHODS

We conducted a cross-sectional study in the region of eastern Algeria based on a sample of 73 patients with celiac disease, aged 18-58 years, who were surveyed using a questionnaire which is inspired by another used in a similar survey.<sup>5</sup> We applied, as criteria for inclusion of individuals with celiac disease, volunteers of both sexes, aged 18 years and more.

Exclusion criteria are respectively: all patients refusing to participate in this study, or subjects having less than 18 years of age.

### RESULTS

#### Descriptive statistics of the sample

The sampled population consists of 56 women and 17 men, representing respective proportions of 76.7% and 23.3%.

The mean age was (30.15 ± 9.64), with a distribution of 76.05 % of individuals belong to the 18 to 34 years interval, 19.71 % aged [34-50] years and 7.07% aged between [50-58] years.

The average age of disease onset is 21.67±13.45 years with a minimum of 0 and a maximum of 56 years.

The occurrence of the disease at an age less than 18 years is 39.72% and 60.27% of subjects suffering from this disease at an age higher or equal to 18 years.

A total of 47 patients, the average BMI values is (20.18 ±3.39) with a minimum of 16kg/m<sup>2</sup> and a maximum of 32kg/m<sup>2</sup>.

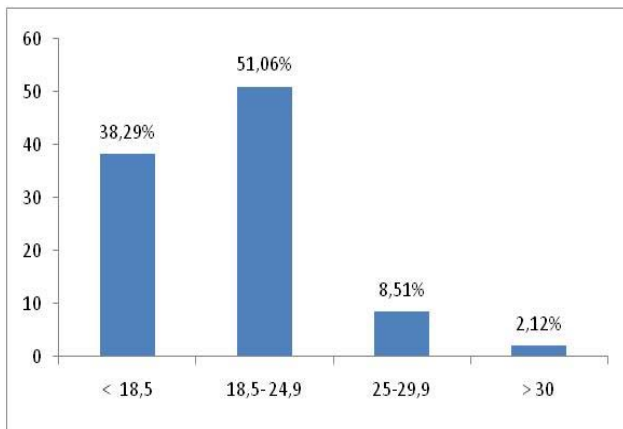
38.29% of the patients are underweight, 8.51% suffering from overweight and 2.12% is one obese subject, a man who has 32 years old and who is strictly respecting the gluten-free diet. (Figure 1).

Of a total of 41 patients who responded to the question of breastfeeding, 68.3% were breastfed for at least 6 months and 17.1% answered by no and 14.6 % do not know.

Patients with a family history of celiac disease accounted for 20.5% of patients or 16 patients. With a related first degree (Brother or sister celiac), we found a single



household with three brothers celiac. A total of 69 subjects, the mean disease duration was  $8.98 \pm 8.18$  years, with a range of 0-32 years.



**Figure 1:** Frequency distribution of BMI

New patients with a disease duration of less than one year represent 7.24% of the sample, the duration of the disease belonging to the interval [1-5] years is the highest (34.78%) and one subject whose disease duration exceeds 30 years.

Patients who do not follow a gluten-free diet represent 11.3%. From the 88.7% following gluten-free diet, 60.4% of them felt a complete clinical improvement and 9.4% felt moderate improvement. Whereas, 18.9% said they felt no improvement after gluten-free diet.

Patients who said their attendance vis-a-vis the diet is good present 54.9%, average attendance represent 38.0% and 7.0% have poor attendance.

**Clinical signs**

We sought in this study all visceral, clinical or morphological manifestations and any pathology associated with celiac disease.

Symptomatic forms represent 100% of patients. 46.60% of patients suffer from digestive and extra-digestive signs in addition to other diseases combined. Clinical pictures found namely digestive symptoms, extra-digestive alone or in association with other diseases. Percentages and numbers are reported in Figure 2. In our series of patients we have not found asymptomatic forms.

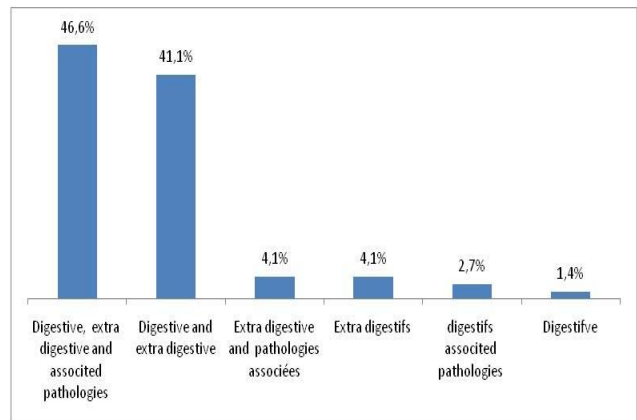
**Gastrointestinal symptoms**

They are represented mainly by chronic diarrhea (69.2%) and abdominal pain (53.8%). Patients suffering from digestive signs represent only 1.40%, and those with extra-digestive symptoms represent 41.1%. The distribution of different clinical signs is shown in Figure 3.

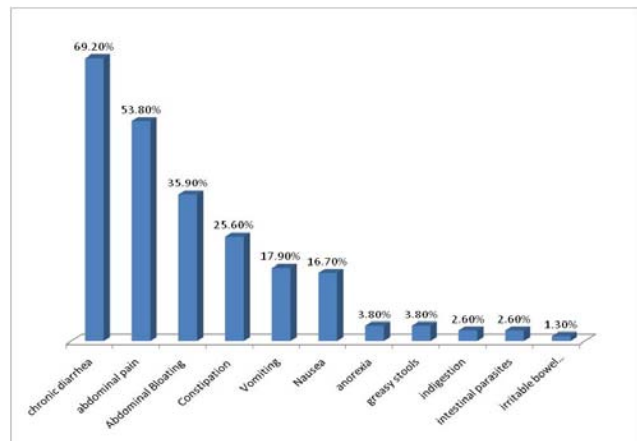
**Extra-intestinal symptoms**

Patients who suffer from extra-intestinal symptoms represent only 4.1%. Extra-intestinal symptoms are mainly represented by asthenia and weight loss with the percentages: 67.9% and 53.8% respectively. Another

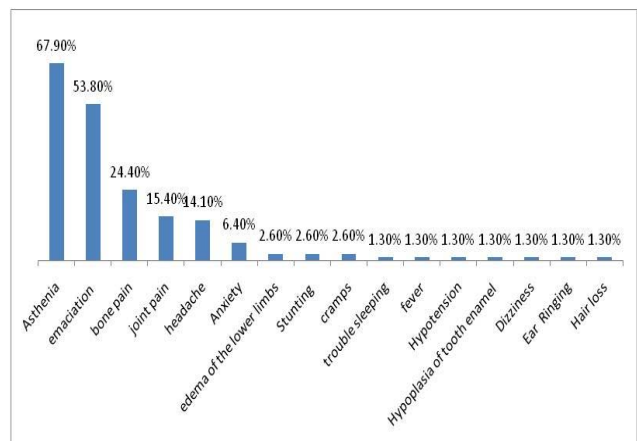
series of extra-intestinal symptoms found namely bone and joint pain, headache, anxiety, edema of the lower limbs, growth retardation, sleep disorders, fever, hypotension, hypoplasia tooth enamel, cramps, dizziness, ear ringing and hair loss with percentages and numbers which are reported in figure 4.



**Figure 2:** Distribution of clinical presentations in our sample.



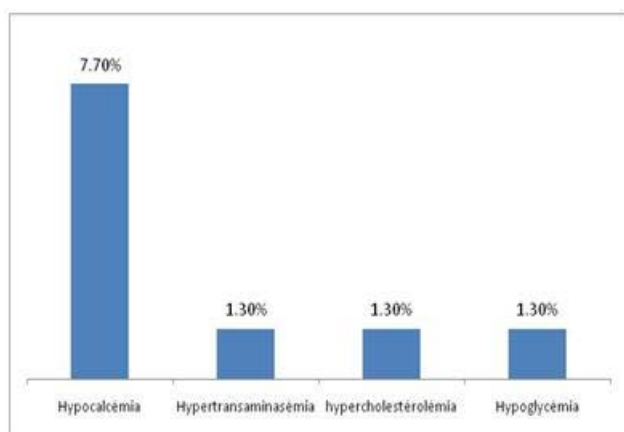
**Figure 3:** Distribution of gastrointestinal symptoms in our sample.



**Figure 4:** Distribution of extra-digestive symptoms in our sample.

Disruption of biological tests found is mainly represented by hypocalcaemia with a percentage of 7.7%. (Figure 5).

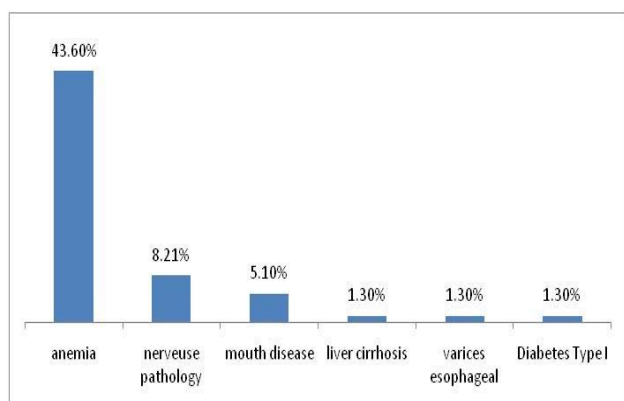




**Figure 5:** Distribution of extra-digestive symptoms in our sample

### Associated pathology

Our series is marked by the presence of certain pathologies associated with digestive symptoms or extra-digestive in 2 and 3 patients respectively that time of diagnosis of celiac disease was 2.70% and 4.10% of cases. The association digestive symptoms, extra-digestive and associated diseases represent the highest percentage. We illustrate this association by the figure 6.



**Figure 6:** Distribution of associated pathology

Associated pathology are represented mainly by anemia with a percentage of 43.6%, 8.21% of the patients have nervous disease, ulcers of the mouth is represented by 5.1% of patients, an association of liver cirrhosis, esophageal varicose veins and a hyper-transaminasemie is presented by a single patient of 18 years old male. One 26 years old male suffering from diabetes type I. In this series the subjects suffering from neurological disorders are female. Two patients with migraine, one epilepsy case, one case of depression, 26 years old woman said she had a cerebral vascular accident.

### DISCUSSION

It was a cross-sectional study in the region of eastern Algeria on 73 patients with celiac disease, to find any clinical signs and pathology associated with celiac disease.

To determine the symptoms and specific aspects of this disease in our population we will analyze our results in the light of data from the international literature.

Most studies on celiac disease report a predominance of female subjects compared to male.<sup>7</sup> This is consistent with our result of sex ratio women/men (3.29). This suggests that female gender is a factor of biological predisposition to celiac disease.

The percentages of moderate and no improvement after gluten-free diet as reported by patients (9.4% , 18.9 % respectively), can be explained by the percentage of average attendance and poor vis-a-vis plan (38.0 % and 7.0%, respectively) or by the falsification of gluten products placed on the Algerian market especially bread and legs that patients considered non compliant. 45% of patients report their average or poor attendance vis-a- vis the diet so they are considered as subjects without dieting which reflects its difficulty. 54.9 % of patients had good attendance vis-a- vis the regime this percentage is lower than that found by Luisa Mearin (2007)<sup>8</sup>, Butterworth et al. (2004)<sup>9</sup> and Leffler et al. (2008)<sup>10</sup> (75%, 74 % and 70.1 % respectively).

The classic signs of celiac disease are related to evil absorption of the small intestine, diarrhea, weight loss, malnutrition, weakness and abdominal pain<sup>11</sup> which is comparable to our results namely , gastrointestinal symptoms which are represented mainly by chronic diarrhea and abdominal pain, and extra-intestinal symptoms which are represented mostly by weakness and wasting.

The weight loss observed in 38.29% could be the result of poor attendance vis-a-vis the gluten free diet. Our results confirm the possibility of the presence of overweight or obesity in celiac disease with percentages in our sample of 8.51% and 2.12% respectively. This is what is reported by Baillargeon and al 2006.<sup>12</sup>

Our results also confirm the possibility of finding constipation in patients with celiac disease. In addition to a very variable namely abdominal bloating digestive symptoms, vomiting, nausea, anorexia, indigestion and greasy stools that are the result of extensive small bowel also the possibility of finding intestinal parasites and irritable bowel syndrome, this diversity makes the diagnosis of this disease more difficult.

To this is added a series of extra-intestinal symptoms found, symptoms that may be secondary to mal absorption syndrome involving anemic headache, dizziness and tinnitus, the bone and joint pain, lower limb edema which may be secondary to hypo albuminemia and hypo proteinemia of evil absorption, hair loss, growth retardation, cramps caused by profuse diarrhea, which may be responsible for electrolyte disturbances, particularly hypokalemia and magnesium deficiency.

In addition to the extra-digestive symptoms that may be independent of evil absorption namely enamel hypoplasia, sleep disorders, fever and hypotension. In addition to digestive and extra-digestive symptoms, celiac disease in our sample may be associated with biological disturbances especially hypocalcemia resulting from evil

absorption, the hyper transaminasemia, cholesterol and blood sugar.

Particular aspects observed in this series of patients are represented mainly by anemia that can be the result of evil absorption, neurological damage i.e. migraine, depression, epilepsy and stroke. According to PRATESSI and al.<sup>13</sup> and Mavroudi and al.,<sup>14</sup> a variety of neurological disorders has been reported in association with celiac disease, particularly epilepsy.

We also observed the presence of oral disease, cirrhosis of the liver and insulin-dependent diabetes which are cited in the literature.<sup>15,16</sup> In addition we observed the presence of esophageal varicose veins in a patient, this disease is not cited in the literature as pathology associated with celiac disease, it can be a feature in our population.

### CONCLUSION

Our study shows that celiac disease in adults in our population is a systemic disease with a female predominance and occurs most often between 20 and 40 years, this disease can be expressed in a variety of digestive symptoms and extra-digestive and more of a series of associated pathology.

Digestive signs are represented mainly by chronic diarrhea and abdominal pain, and extra-intestinal symptoms which are represented mostly by weakness and wasting what is classic and consistent with literature data.

There was also a variety of digestive symptoms namely abdominal bloating, vomiting, nausea, anorexia, indigestion, greasy stools, intestinal parasites and irritable bowel syndrome. Extra-intestinal signs were reported represented by headache, dizziness and tinnitus, of bone and joint pain, lower limb edema, hair loss, growth retardation, cramps, hypoplasia dental enamel, sleep disorders, fever and hypotension.

In this sample celiac disease may be associated with biological disorders represented by hypocalcemia, hyper transaminasemia, hypercholesterolemia and hypoglycemia in addition to a series of pathology including: anemia, neurological damage, ulcers of the mouth, cirrhosis of the liver, diabetes mellitus and esophageal varicose veins.

Celiac disease in our population is clinically manifested so fickle and variable, so it is not easy to define a typical symptom picture.

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