

# The importance of food sector in celiac disease

Ayşe Sahin Tutak<sup>1</sup>, Songul Sahin Ercan<sup>2</sup>

<sup>1</sup>Adiyaman University Faculty of Medicine, Department of Internal Medicine, Adiyaman, Turkey

<sup>2</sup>Gaziantep University Faculty of Engineering, Gaziantep, Turkey

Copyright © 2019 by authors and Annals of Medical Research Publishing Inc.

## Dear Editor,

Celiac Disease (CD) is an autoimmune disease that can affect all age groups life-long in both children and adults. It can be diagnosed at any age. Environmental and genetic factors play a role on CD. It could cause complications that lead to decrease in quality of life and also death when untreated. It is a disease caused by ingestion of foods containing gluten in people with genetic predisposition. Gluten is a protein found in wheat and other cereals (barley, oats, rye). The frequency of CD is increasing all over the world due to the development of easy and fast diagnostic methods. The frequency of CD in the world is reported as 0.05-0.1% (1). The prevalence of CD in our country was observed as 0.9% in a study in 1000 healthy children aged between 2-18 years. That value was found as 0.47% in another study that was in 7-18 aged group (2-3).

Clinical findings in celiac disease are quite different and variable.

Patients may apply to the clinic with non-specific symptoms and can be diagnosed by careful examination. Clinical features as vary greatly in celiac patients according to age groups. CD is usually manifested by diarrhea, abdominal distention and growth retardation in infants and young children. In addition, loss of appetite, vomiting, irritability, constipation can often be seen. Extraintestinal symptoms such as short stature, neurological findings and anemia are prominent in older children and adolescents (4).

In adults, the presentation of classic disease may be diarrhea and accompanying abdominal pain and dyspeptic complaints. Besides these, non-specific iron deficiency anemia, no increase in weight if desired, and symptoms such as fatigue may also occur (5). At the same time, symptoms except gastrointestinal system may be seen in the clinic of the disease (6). It also occurs in other

autoimmune diseases (type 1 diabetes mellitus, thyroiditis, down syndrome) associated with celiac disease. The most important complications seen in patients who have not been diagnosed for a long time or do not have gluten-free diet are the emergence of malignancies such as autoimmune diseases, osteoporosis and T-cell lymphoma.

Complications typically occur many years later, usually in adulthood.

In addition to intestinal lymphoma, the risk of adenocarcinoma development has increased in celiac patients anywhere in the gastrointestinal tract (7). The prognosis is very good in patients who have a gluten-free diet. Quality and expectation of life are lower in patients who do not adapt to diet while they are not different from those in healthy individuals (8).

GIS cancer risk such as esophagus, stomach and intestine increased 10-15 times in general population in patients with complete or occasional non-compliance. Immune-induced diseases such as thyroiditis, hepatitis, diabetes were determined to be less likely (6). The American Journal of Pediatric Gastroenterology (NASPGAN) has reported that the only valid method for celiac therapy is the life long tight gluten-free diet (6). There is a greater number of cases of non-symptom cases compared to symptomatic cases. So, celiac disease is similar to the iceberg model (9). Therefore, the number of patients diagnosed with late diagnosis is high due to specific or non-specific symptoms.

It is supposed that there are more patients than the number of patients diagnosed in the community. So, the number of patients will increase as more easily diagnosed tests are developed and it is considered that foods for this large population will take a larger place in the food sector. Products produced for celiac patients are called gluten-free food all over the world. The Turkish Standards

Received: 11.02.2019 Accepted: 03.04.2019 Available online: 15.04.2019

Corresponding Author: Ayşe Sahin Tutak, Adiyaman University Faculty of Medicine, Department of Internal Medicine, Adiyaman, Turkey, E-mail: aysesahintutak@hotmail.com

Institute divides gluten products into two groups according to gluten content: (1) reduced gluten ( $\leq 200$  mg / kg, dry matter), (2) gluten-free products ( $\leq 20$  mg / kg, in dry matter) (10). The main problem in gluten-free products is that they are poorer in protein, dietary fiber and some B-group vitamins compared to the products containing gluten (11). This deficiency also adversely affects the some sensory properties of the food product, especially texture, taste, color. Today, there are many international and few national food companies producing gluten-free foods. However, it is thought that gluten-free products lack insufficient variety and lower flavor.

*Competing interests: The authors declare that they have no competing interest.*

*Financial Disclosure: There are no financial supports*

*Ayşe Sahin Tutak ORCID: 0000-0001-5911-2531*

*Songul Sahin Ercan ORCID: 0000-0003-1630-7552*

## REFERENCES

1. Lionetti E, Catassi C. New clues in celiac disease, epidemiology, pathogenesis, clinical manifestations and treatment. *Int Rev Immunol* 2011;30:219-31.
2. Demirçeken FG, Kansu A, Kuloğlu Z, et al. Human tissue trans glutaminase antibody screening by immuno chromatographic line immunoassay for early diagnosis of celiac disease in Turkish children. *Turk Gastroenterol* 2008;19:14-21.
3. Dalgiç B, Sarı S, Baştürk A, et al. Prevalence of celiac disease in healthy Turkish school children. *Am J Gastroenterol* 2011;106:1512-7.
4. D'Amico MA, Holmes J, Stavropoulos SN, et al: Presentation of pediatric celiac disease in the United States: prominent effect of breastfeeding. *Clin Pediatr* 2005;44:249-58.
5. Green PH, Shane E, Rotterdam H, et al. Significance of unsuspected celiac disease detected at endoscopy. *Gastrointest Endosc* 2000;51:60-5.
6. Hill ID, Dirks MH, Liptak GS, et al: North American society for pediatric gastroenterology, hepatology and nutrition. guideline for the diagnosis and treatment of celiac disease in children: recommendations of the north american society for pediatric gastroenterology, hepatology and nutrition. *J Pediatr Gastroenterol Nutr* 2005;40:1-19.
7. Catassi C, Bearzi I, Holes G. Association of celiac disease and intestinal lymphomas and other cancers. *Gastroenterology* 2005;128:S79-86.
8. Wegner G, Berger G, Sinnreich U, et al. Quality of life in adolescents with treated celiac disease: Influence of compliance and age at diagnosis. *J Pediatr Gastroenterol Nutr* 2008;47:555-61.
9. Lindfors K, Koskinen O, Kaukinen K. An update on the diagnosis of celiac disease. *Int Rev Immunol* 2011;30:185-96.
10. Anonim, Gluteni azaltılmış ve glutensiz hale getirilmiş gıdalar, TS 13143, Türk Standartları Enstitüsü, Ankara, 2005.
11. Thompson T, Folate iron and dietary fiber contents of the gluten-free diet, *Journal of The American Dietetic Association* 2000;100(11):1389-96.