

# Psycho-nutritional approach for Celiac Disease associated with Type 1 Diabetes and Binge Eating Disorder: a case report

[Antonella Santoro](#)<sup>1\*</sup>, [Marzio Stefano Fragale](#)<sup>2</sup>, [Francesca Valente](#)<sup>2</sup> and [Achiropita Curti](#)<sup>2,3</sup>

We present a case of a patient with Celiac Disease (CD) associated with Type 1 Diabetes and strongly complicated by Binge Eating Disorder (BED), accompanied by anxiety and depression. We successfully treated this patient with appropriate and concerted nutritional intervention and psycho-educational therapy.

## **Case report**

A 49-year old woman was admitted to the Dietetic and Nutrition Surgery of Castrovillari Hospital for celiac disease treatment. Her medical history included a diagnosis of Hashimoto's thyroiditis at age 32, Type 1 Diabetes at 36-years old and CD at 45-years old. CD was diagnosed after anti-gliadin IgA and IgG and anti-endomysial IgG tested positive. At 46-year old, she was treated for Type 1 Diabetes for three years and assigned a strict gluten-free diet, which was followed irregularly and not according to prescription. No psychotherapy was adopted. Subsequently, one year before the time of admission at our unit, the patient was hospitalized in an eating disorder center, but no improvement was achieved due to a inadequate approach and to a lack of family support and personal motivation.

At the time of the admission to our unit, physical examination revealed that her height was 1.65 m and her weight was 79 kg, we can therefore estimate a Body Mass Index (BMI) value of 29.02 Kg/m<sup>2</sup>. She had visceral obesity and high blood pressure. Moreover, she showed a psychologically evident state of depression and anxiety disorder. Laboratory findings, carried out on 12 hours fasting patient, indicated altered lipid metabolism: triglycerides level were 214 mg/dL, LDL-cholesterol was 134 mg/dL, and total cholesterol was 209 mg/dL. Fasting blood glucose level measured was very high (264 mg/dL) and glycated hemoglobin A1c (HbA1c) level was 9%. Anti-endomysial IgG test was positive. Upper abdominal ultrasound examination showed the liver increased in size with steatosis.

The patient followed therapy for diabetes (insulin glargine 38 UI/die and metformin 500 mg/die), for hypercholesterolemia (atorvastatin 20 mg/die), for high blood pressure (telmisartan 40 mg/die, hydrochlorothiazide 12,5 mg/die) and treatment for anxiety depressive disorder (fluoxetine 20 mg/die, alprazolam 1 mg if needed).

The interview with nutritionist therapist showed that her habitual eating pattern consisted of fasting periods of over 5 hours with frequent episodes of compulsive overeating, without recurrent inappropriate compensatory behaviors. She had no knowledge about the relationship between meal carbohydrates and appropriate insulin pharmacological dose. No psycho-educational approaches were ever applied before. Given these latter observations, a further diagnosis of BED was made.

Our aims were to obtain reduction of bingeing, hence weight loss and improvement patient's clinical condition, in order to achieve better pharmacological and nutritional compliance.

We began by providing the patient with a personalized diet plan consisting of 6 meals. Her average

daily total caloric intake was estimated at 1485 kcalories and meal pattern consisted of 18.85% proteins, 55.35 % gluten-free carbohydrates, including 32% fiber, and 25.80% lipids; sucrose was substituted with alternative sweeteners such as aspartame.

After 3 months, laboratory findings showed that the patient was not following the assigned meal plan, in fact elevated blood values of HbA1c and triglycerides were measured, also anti-gliadin IgA test was positive, indicating the presence of gluten in diet. The patient was then assigned to a psychotherapist for weekly clinical interview to encourage auto-evaluation of personal, familiar and social conscious and unconscious causes of BED. The psychotherapist and nutrition therapist team optimized the patient's treatment plan; hence, diet planning was accomplished with a starting 1-year follow-up.

After 6 months follow-up, we satisfactorily found that for the first time the patient had become aware of her eating disorder. Laboratory findings revealed decreased blood HbA1c value (7.5%) and negative anti-endomysial IgG test. It was possible to reduce pharmacological doses for Type 1 Diabetes and high blood pressure treatment. The patient showed progress and compliance with nutritional and psychological treatment.

After 1-year follow-up, patient weight was 72 kg, calculated BMI was 26.45 kg/m<sup>2</sup>. HbA1c value was 7.5%. Laboratory blood tests revealed triglycerides 150 mg/dl, total cholesterol 200 mg/dl, LDL-cholesterol 130 mg/dl, HDL-cholesterol 60 mg/dl, glycemia 130 mg/dl. Anti-endomysial IgG test was negative. Unfortunately, abdominal ultrasound results showed yet enlarged liver with steatosis. However, psychotherapy was able to improve patient compliance and her acceptance of chronic pain and also reduced compulsive eating episodes; nutritional therapy was able to educate the patient on better eating habits including following thoroughly a gluten-free and her personal diet planning.

## **Discussion**

CD is defined as an abnormal immune response to gluten in a person who has a genetic tendency. The main feature of the disease is a gastrointestinal malabsorption syndrome caused by an enteropathy with atrophy of small bowel mucosa and impairment of food absorption<sup>1, 2</sup>. The association of Type 1 Diabetes and CD poses multiple problems for diagnosis, treatment and counseling. The classical presentation of CD can occur in Type 1 Diabetes patients, but many patients with CD and Type 1 Diabetes are either asymptomatic (silent CD) or present with only mild symptoms<sup>3, 4</sup>. On the other hand, several studies indicate that, in general, the prevalence of BED in diabetic patients is higher than in the general population; BED worsens the clinical picture as the high prevalence of binge eating and its severe influence on metabolic control represents a very serious eating problem for Type 1 Diabetes patients<sup>5-7</sup>.

Unlike the treatment of acute illnesses, the most important choices affecting the health and well-being of people with diabetes are made by the individual<sup>8</sup>. Diabetic patients report difficulties in complying with the dietary regime due to several associated meanings and negative emotions, such as the loss of pleasure in eating, autonomy and freedom<sup>9</sup>. Patients perceive dietary recommendations as restraining and not adaptable to individual needs. This aspect leads patients to develop eating disorders.

Here, we report a case of multifactorial disease consisting in long-term CD masked by the presence of Type 1 Diabetes and strongly complicated by BED in a 49-year old woman of Southern Italy, with

errors in initial clinical diagnosis and treatment. Our case illustrates the importance of the association of a psychotherapist and nutrition therapist team, whose treatment has been shown to be effective.

Interestingly, after a one-year follow-up, there were notable improvements in eating behavior resulting in significant weight loss for the first time in this patient, who was previously not given any family support to follow her diet planning. We observed greater awareness in eating and a strong motivation to keep on dietary planning and follow-up; these features were demonstrated by improvements in clinical findings observed and led to accomplish more progresses, as in liver conditions.

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<sup>1</sup> Dipartimento di Farmacia e Scienze della Salute e della Nutrizione, Università della Calabria, Rende (CS); <sup>2</sup> Unità di Dietetica e Nutrizione, Ospedale di Castrovillari, Castrovillari (CS); <sup>3</sup> Unità Operativa Territoriale di Dietetica e Nutrizione Clinica, ASP, Cosenza.

\*corresponding author: Antonella Santoro e-mail: [antonella.santoro@unical.it](mailto:antonella.santoro@unical.it); tel +390984493189; fax: +390984493271

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