



EDITORIAL

Eating disorders and diabetes mellitus[☆]

Trastornos de la conducta alimentaria y diabetes mellitus

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Diabetes mellitus (DM) is a disease in which diet is one of the mainstays in treatment. Because of the additional distress caused by diagnosis of the condition, the feeling of loss of autonomy, and decreased self-esteem, DM is not infrequently associated with an increased incidence of eating disorders (EDs), particularly during adolescence.

EDs comprise a number of diseases whose common denominator is impaired nutrition-related behavior and which have a negative impact at both the physical and the psychological levels. The most common EDs include anorexia nervosa (AN), bulimia nervosa (BN), and binge-eating disorder (BED). In AN, a distorted body image leads to voluntary weight loss. Regular binge-eating episodes occur in both BN and BED, with the difference that compensatory behaviors, such as laxative abuse or self-induced vomiting, occur in BN to prevent weight increase.^{1,2} The prevalence of EDs in Spain is similar to that found in other developed countries, i.e. it ranges from 1% to 3% of the adolescent and young adult population. This proportion increases to 5% in females only.²

Interest in the association of EDs and DM dates back to the 1970s, and has particularly focused on the prevalence of EDs in subjects with type 1 DM (T1DM), and also on the impact of EDs on metabolic control and the chronic complications associated with T1DM, especially in adolescent and/or young adult females.^{2,3}

11.5–27.5% of adolescents with T1DM meet ED criteria, with BN and BED being the most prevalent disorders.^{2,4,5} In addition, intentional insulin dose missing or reduction to promote weight loss through glycosuria, formerly considered as a compensatory behavior in BN, is now a not otherwise specified ED characteristic of T1DM called diabulimia.² The prevalence of diabulimia is over 30% in women aged 18–30 years. While studies reported to date mainly focus on adolescence, there are adequate data that enable us to state that although EDs start at this stage or in early adulthood, up to one-third of those affected continue to have diagnostic criteria five years afterwards. In fact, some stability has been seen in the incidence of EDs in the first adult stages, while the incidence of subclinical EDs, i.e. those which do not meet all diagnostic criteria, increases with age, having a negative impact on metabolic control and self-care capacity.^{2,4,6}

The etiology of EDs in T1DM is multifactorial, with genetic, cultural, and environmental factors all contributing to it. On the one hand, our society worships slimness, which may cause body image dissatisfaction. On the other hand, developed countries live in a state of abundance that may result in higher body mass indices (BMIs) leading to the continuous use of restrictive diets than often fail, with resultant frustration and mood decline. Moreover, the maintenance of normal weight and healthy hygienic and dietary habits are indispensable in diabetic patients. The rapid weight recovery usually seen with insulin therapy after the onset of T1DM may lead patients to intentionally refrain from taking insulin in order to promote the loss of kilocalories in urine. Because of this, these patients with diabulimia have a higher admission rate for diabetic ketoacidosis. Fear of hypoglycemia may also lead to unhealthy dietary

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habits, resulting in a predisposition to excess intake. In addition, subjects with T1DM may have altered the external stimuli that condition intake. For example, in non-diabetic subjects, appetite is stimulated by the smell of food; by contrast, in patients with T1DM, stimuli may be different and very diverse, possibly including eating as a function of the insulin dose to be administered, capillary blood glucose levels, programmed physical activity, and other factors which have nothing to do with the typical triggers, such as hunger.^{2,7}

Poorer blood glucose control, increased episodes of diabetic ketoacidosis, and more visits to the emergency room have been shown in subjects with diabulimia. However, there has been some controversy regarding the relationship between the classical EDs, such as AN and BN, and poor metabolic control. The risk of microvascular complications is also higher in patients with T1DM and EDs, including diabulimia. Diabulimia has also been associated with a mortality risk up to three times higher, after adjusting for age, glycosylated hemoglobin, and BMI.⁶

Interest in the association between type 2 DM (T2DM) and EDs only arose in the late 1990s.⁸ The reason for this was that previously T2DM was not considered to be a significant risk factor for the development of EDs because the "traditional" age of onset of T2DM was older than that of EDs. The diagnosis of T2DM at increasingly younger ages, as well as the association of T2DM with obesity, began to arouse interest in the relationship of EDs and T2DM.^{3,5,9,10} The prevalence of EDs as comorbidities of T2DM ranges from 2.5% to 40%, with BED being the most common ED, with a prevalence of 2.5–25.6%. In addition, this prevalence appears to be directly related to the degree of obesity. Subjects with T2DM and a concomitant BED are usually younger and have higher BMIs and more depressive symptoms.^{2,10}

Interestingly, most studies conducted till date have not shown a poorer metabolic control in subjects with T2DM and BED, which suggests that binges have little effect on blood glucose control as compared to purgative behaviors, such as intentionally missing insulin doses in T1DM. Similarly, no increased risk of microvascular complications has been seen in these patients with BED.^{11,12} Higher admission rates have, however, been reported, possibly associated with a greater presence of depressive symptoms, a known factor for the overuse of health care.¹³

Early ED management is essential, but this requires prior diagnosis. As recommended in the guidelines of the different associations, regular screening should ideally be performed to rule out EDs, sociopathies, and mood disorders.^{14,15} If routine screening is not performed, conditions such as a worsening of blood glucose control for no apparent reason, recurrent episodes of diabetic ketoacidosis, recurrent hypoglycemia, poor adherence to outpatient monitoring, symptoms suggesting depressive disorder, a disinclination to be weighed, low self-esteem, excess concern for physical appearance, calculation of the calorie contents of meals, and laxative abuse, amongst others, should alert the physician in charge.^{2,5}

Once the ED is diagnosed, multidisciplinary treatment, including immediate psychological management, is recommended. Weight loss as a mainstay of treatment should be relegated to the background, and blood glucose control goals should also be reconsidered and made more

flexible until a significant improvement in the ED has been achieved.⁵

The diagnosis of EDs in patients with DM is currently difficult, not only because they tend to hide the condition, but also because of the lack of understanding and awareness in the health care professionals who see them. Because of ED prevalence and its impact on blood glucose control and, thus, on the short- and long-term complications related to DM, it is extremely important to raise awareness of these conditions and to train the physicians in charge of these patients in this area. To date, the psychological approach has been shown to be the most effective for the treatment of EDs.⁵ Various drugs have also been used to control binge-eating episodes, but with little effect on blood glucose control. It would be interesting to investigate the effect of glucagon-like peptide receptor agonists, which promote satiety, not only by slowing down gastric emptying, but also by having a direct effect on the hypothalamic satiety centers in these patients with T2DM and a concomitant ED.

In conclusion, people with diabetes have an increased risk of developing EDs, with a resultant increase in short- and long-term complications related to DM. Early diagnosis, based on clinical suspicion or routine screening using validated questionnaires, is of vital importance to allow for a multidisciplinary approach that improves the prognosis for these patients.

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