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EDITORIAL

Childhood obesity: Prevention or treatment?☆

Obesidad infantil: ¿prevención o tratamiento?

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Childhood obesity is unquestionably one of the major health problems confronting the developed world, and it has been termed a global XXI century epidemic by the World Health Organisation. While the aetiology of this disease is multifactorial and includes genetic and environmental causes, we can broadly state that the excess fat that defines it fundamentally arises from an imbalance in energy intake and expenditure. Numerous authors have highlighted that there is an obesogenic environment in our society characterised by the availability of foods rich in calories, refined sugars, saturated fats and salt at all times of day, and the emergence of sedentary leisure habits, with several hours a day spent in the use of televisions, console videogames, smart phones, etc., and a considerable decline in the hours children engage in physical activity, be it play or sports.

Although the concept of obesity is well understood by all, its appropriate diagnosis continues to be a subject of debate. Obesity corresponds to excess body fat, so its correct diagnosis requires some marker or anthropometric measure that can be used to assess body fat accurately and be available to all paediatricians in everyday practise. It is possible to measure total fat mass directly with great accuracy, but the methods employed for this purpose are only within reach of a few research facilities. This is why, for all its drawbacks, the body mass index (BMI) has been adopted as the preferred method to define overweight and obesity. Whereas BMI values of 25 and 30 kg/m^2 are unanimously accepted as the cut-off points for overweight and obesity in adults, the situation is quite different in paediatrics. The very nature of the child as a growing being whose body composition changes as years go by precludes the determination of a single value for each age-and-sex range. It is on this point that disagreements arise as to which is the appropriate standard for comparison. Nevertheless, the definition based on *z*-scores seems to be prevailing in recent years, so that overweight is defined as a BMI *z*-score equal or greater than +1 and obesity as a BMI *z*-score equal or greater than +2.

The seriousness of childhood obesity does not stem from its increasingly frequent association with the development of comorbidities in the paediatric age group (diabetes mellitus, hypertension, fatty liver disease, etc.), but from the fact that obese children are at high risk of becoming obese adults, which carries an increased risk of mortality. A recent study conducted in Jewish adolescents showed a significant association between a high BMI in adolescence and increased cardiovascular and all-cause mortality in adulthood.[1]

The increasing trend in the prevalence of childhood obesity is generalised across the developed world, and is particularly marked in countries like the United States of America, where the prevalence has tripled in the past few decades. In Europe, childhood obesity is a particularly

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serious problem in southern countries, including Spain. This trend, however, seems to have reversed in recent years. The findings of the ALADINO study, which have been presented recently and are awaiting publication, show a significant decrease in the prevalence of obesity and overweight in Spanish children. A previous study conducted in a sample of public schools in Oviedo with a twenty-year followup had similar results.[2]

The treatment of childhood obesity may include pharmacological and nonpharmacological measures, and some cases in adolescents may even require surgery. Chief among the nonpharmacological measures are changes in diet and lifestyle habits, with an increase in hours spent in physical activity and a decrease in the time spent in sedentary activities.

In the current issue of ANALES DE PEDIATRÍA, Rajmil et al. present the results of a systematic literature review that included a total of 48 studies in the paediatric age group with the purpose of evaluating the efficacy of different clinical interventions in childhood obesity.[3] The review excluded studies on the management of obesity that used any type of pharmacological and/or surgical interventions or preventive strategies. The authors concluded that despite the heterogeneity of the interventions, those that proved most efficacious in achieving a reduction of BMI in study participants were multicomponent interventions that combined changes in diet, physical activity and lifestyle. Furthermore, these interventions were more likely to succeed the greater the degree of family involvement and when they were initiated at early ages. These results are consistent with the findings of a recent Cochrane review in children aged up to 6 years, although the effect size was small.[4]

Studies have been published that demonstrate the efficacy of these interventions when they are implemented in primary care settings and applying the principles of motivational interviewing. Motivational interviewing is a patient-centred communication style used extensively in behaviour modification. Its purpose is to establish a common ground for patient and clinician, who then form a dynamic team in which the patient is the most important member. In the specific case of childhood obesity, motivational interviewing must necessarily involve the family. This approach is based on empathy, avoids ''labelling'' and assigning blame to the patient, and works on accepting ambivalent feelings, identifying resistance to change, and ultimately generating self-motivating affirmations that can foster positive change.

Difficulties in adhering to treatment and in the long-term maintenance of results have been widely reported in relation to the management of obese paediatric patients. Thus, prevention may be a more effective approach to the problem.

Starting with the research of Osmond and Barker,[5] the scientific community has produced a growing body of evidence on the existence of ''foetal programming'' by which certain physiological events that take place in the early stages of life between conception and age 2 years (the so-called first thousand days of life) produce permanent changes in metabolism that somehow promote the subsequent development of various cardiovascular risk factors and diseases.

An adequate control of diet that guarantees optimal weight gain during pregnancy, maintenance of exclusive breastfeeding until age 6 months, the gradual introduction of solid foods in a balanced diet without excessive consumption of animal protein and with adequate intake of fruits, vegetables, and whole grains and few simple carbohydrates, the structured monitoring of weight and height gain in children in primary care, and educating parents in how to promote healthy lifestyle habits in children, emphasising active over sedentary leisure activities, are some of the elements that research has shown ought to be implemented in strategies for the prevention of childhood obesity.

A Cochrane review on interventions for preventing obesity in children identified the following strategies as having beneficial effects[6]: a school curriculum that includes healthy eating, physical activity and body image; increased sessions for physical activity and the development of fundamental movement skills throughout the school week; improvements in nutritional quality of the food supply in schools; environments and cultural practices that support children eating healthier foods and being active throughout each day; support for teachers and other staff to implement health promotion strategies and activities; parent support and home activities that encourage children to be more active, eat more nutritious foods and spend less time in screen based activities.

Last of all, the aforementioned review in this issue[3] highlighted the lack of clear criteria for referral from primary to specialty care. This is a problem that should be addressed on an urgent basis. Although we have managed to slightly reduce the prevalence of obesity in our children, there is a significant number of children that have severe obesity or associated comorbidities. The management of these patients requires a more aggressive and multidisciplinary approach.

In short, childhood obesity continues to be a problem for society and a considerable challenge for paediatricians. It is our collective duty to bring the number of children that develop obesity to a minimum (primordial prevention), which calls for the implementation of appropriate preventive measures from the early stages of life. Another common goal should be to prevent the progression of children with overweight to obesity (primary prevention), and to keep obese children from becoming obese adults (secondary prevention), which would require: (1) clear criteria for the diagnosis of obesity and overweight; (2) development of adequate motivational interviewing skills in professionals in charge of the management and followup of obese patients; (3) standardisation of and agreement on the management of obesity in primary care settings; (4) establishment of clear criteria for referral to specialty care, and (5) creation in hospitals of units specialised in obesity for the intensive treatment of the most serious cases.

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