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ORIGINAL ARTICLE

Treatment of obesity in a hospital endocrinology clinic: Influence of parental body mass index☆,☆☆

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KEYWORDS
Family obesity;
Childhood obesity;
Obesity therapy;
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Abstract
Introduction: Parental obesity is a risk factor for childhood obesity. The aim of this study was to determine if parental obesity influences the adherence and success of obesity treatment in a hospital paediatric endocrinology clinic.
Material and methods: An analytical, prospective, longitudinal study was conducted on obese children aged 4–14. An initial body mass index (BMI) was obtained, and again at 6 months after receiving health, hygiene and dietary recommendations. Success was considered as a decrease of 0.5 in the BMI z-score, and adherence to attending the 6-month review. Parental BMI was determined to identify overweight. The χ^2 test was used for qualitative variables and the *T*-Student test for quantitative (significance, $P < .05$) variables.
Results: The study included 100 children (52 male), 9.9 ± 2.7 years old, BMI $28.1 \pm 4.5\,kg/m^2$ and BMI z-score 3.11 ± 0.98 (85% had a BMI z-score > 3). More than half (59%) of the children had one or both parents obese (41 fathers and 37 mothers were obese). Treatment was not adhered to by 25 children. Adherence was worse if both parents were obese, OR 3.65 (1.3–10.5) ($P \leq .01$), and adherence was better if the mother was not obese, although the father was ($P = .01$). The treatment had significant success in 40 patients. If the mother was the only obese one in the family, the possibility of treatment failure was greater, OR 5.6 (1.4–22.4) ($P < .01$).
Conclusions: A high percentage of children with severe obesity have obese parents. The mother has an important influence on adherence and response to treatment for the severely obese child.

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PALABRAS CLAVE
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Tratamiento de la obesidad en la consulta de endocrinología de un hospital. Influencia del índice de masa corporal de los padres

Resumen
Introducción: El objetivo del estudio es conocer si tener padres obesos influye en la adherencia y el éxito del tratamiento frente a la obesidad en la consulta de endocrinología infantil de un hospital.
Material y métodos: Estudio analítico, prospectivo y longitudinal en obesos de 4–14 años. En ellos se determinó el IMC inicial y 6 meses después de que recibieran pautas higiénico-dietéticas saludables. Se consideró éxito significativo la disminución de 0,5 DE del IMC y adherencia que los pacientes acudieran a la revisión semestral. Se calculó el IMC de los padres para identificar a los obesos. Se utilizó el test de la χ^2 para comparar las variables cualitativas y el test de la t de Student para las variables cuantitativas (significativo: $p < 0{,}05$).
Resultados: Cien niños (52 varones), edad media ± DE: 9,9 ± 2,7 años, IMC 28,1 ± 4,5 kg/m^2 y *z*-score del IMC 3,11 ± 0,98 (el 85% tenía un *z*-score del IMC > 3). Eran obesos 41 padres y 38 madres (el 59% tenía uno o los 2 padres obesos). No se adhirieron al tratamiento 25. La adherencia era peor si los 2 padres eran obesos, OR 3,65 (1,3–10,5) ($p = 0{,}01$) y era mejor si la madre no era obesa, aunque el padre lo fuera ($p = 0{,}01$). El tratamiento tuvo éxito significativo en 40 pacientes. Si la madre era la única obesa en la familia la posibilidad de no tener éxito era mayor, OR 5,6 (1,4–22,4) ($p < 0{,}01$).
Conclusiones: Un alto porcentaje de niños con obesidad severa tienen padres obesos. La madre tiene gran influencia en la adherencia y respuesta al tratamiento frente a la obesidad del hijo muy obeso.

Introduction

Childhood obesity is a public health problem in developed countries. The World Health Organisation (WHO) has called obesity the XXI century epidemic due to the proportions it has acquired and its impact on morbidity, mortality, quality of life and health care costs.[1,2] Europe has a surveillance system that has alerted us to the high prevalence of childhood obesity in countries in southern Europe.[3] Spain ranks third in Europe, with a 19.1% prevalence of childhood obesity and a 26.1% prevalence of childhood overweight, according to the Estudio de Alimentación, Actividad física, Desarrollo Infantil y Obesidad (Study on Nutrition, Physical Activity, Childhood Development and Obesity [ALADINO]) conducted in 2011.[4]

Childhood obesity is a multifactorial condition. The literature has described many risk factors involved, including parental obesity and sociocultural level. A study conducted in Sweden by Moraeus et al.[5] addressed the importance of the association between parental obesity and future obesity in their children. The study conducted in Spain by Santiago et al.[6] also referred to the importance of parental obesity, which was the best predictor of childhood overweight in both sexes. Rodriguez et al.[7] reported that a high percentage of parents in Spain do not correctly assess the weight status of their overweight children, especially at earlier ages. This inadequate perception by overweight parents may also be a risk factor for childhood obesity. Several studies have concluded that parents influence the dietary behaviours of their children concerning food preferences and the type, amount, and quality of consumed foods.[8]

It seems evident that there is a significant relationship between obesity in parents and obesity in their children. However, few studies have assessed whether obesity in the parents once children are already obese can influence the children's response and adherence to obesity treatment. It is known that mothers are mainly responsible for passing on healthy dietary habits to their children,[9,10] but it is not known whether the response to obesity treatment varies depending on which of the parents is obese. There is also some degree of controversy as to whether parents influence the nutritional status of their children throughout their entire development, or whether their influence reaches only as far as 10 years of age or the beginning of puberty.[11] Knowing this would help us implement more effective therapeutic strategies.

The aim of this study was to learn whether having obese parents influenced the response and adherence to treatment of obese children, and to analyse the response to lifestyle and dietary recommendations given to the population under study at the paediatric endocrinology clinic.

Materials and methods

We conducted a prospective, longitudinal analytical study. We recruited children and adolescents aged 4–14 years referred by their paediatrician to the paediatric endocrinology clinic of a tertiary hospital between November 2010 and November 2012 for obesity treatment. The children's weight (kg), height (cm) and waist circumference (cm) were measured at the clinic, followed by calculation of their body mass index (BMI, kg/m^2) and *z*-scores for weight, height, BMI and waist circumference for their sex and age (charts of the 2010 Spanish study by Carrascosa for weight, height and