



ORIGINAL ARTICLE

Lessons from Healthcare Utilization in Children With Obstructive Sleep Apnoea Syndrome[☆]



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KEYWORDS

Sleep apnoea syndromes;
Child health;
Health services needs and demand;
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Abstract

Introduction and objectives: Paediatric Obstructive Sleep Apnoea-Hypopnoea Syndrome (OSAS) is a multisystemic condition affecting child's health status that may be investigated analyzing demand for healthcare. Objective: to quantify the frequency of medical consultations in children with OSAS over a 5-year period, compared to a healthy population.

Methods: A longitudinal, case-control, ambispective study was conducted at a hospital pertaining to the national public health system. 69 consecutive children referred for OSAS were recruited with no diseases other than OSAS so that healthcare demand was purely attributed to this condition. Matched healthy control children were selected to compare these data. Data regarding frequency of the medical consultations were obtained over 5 years: the year of the treatment ("Year 0"), 1 and 2 years before ("Year -1" and "Year -2" respectively), and 1 and 2 years after treatment ("Year +1" and "Year +2").

Results: Frequentation index (FI), as ratio between the use of health services by OSAS children and healthy controls was 1.89 during Year -2, and 2.15 during Year -1 ($P<.05$). Treatment diminishes utilisation, with FI of 1.59 during Year +1 and 1.72 during Year +2 ($P<.05$). The main causes of attendance were otolaryngological and pneumological diseases, improving after treatment.

Conclusions: Children suffering from OSAS demand more healthcare services, at least 2 years before treatment, implying that the disease could be present years before we manage it. Therapeutic actions improve healthcare services utilisation, although remain higher than for controls, which suggests OSAS sequelae or residual disease.

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PALABRAS CLAVE

Síndrome de apnea del sueño obstructiva; Salud del niño; Necesidad y demanda de servicios de salud; Utilización de servicios de salud

Aprendiendo de la demanda asistencial en el síndrome de apnea del sueño infantil**Resumen**

Introducción y objetivos: El síndrome de apnea-hipopnea del sueño (SAHS) pediátrico engloba alteraciones multisistémicas que afectan al estado general de salud, valorado indirectamente mediante el estudio de la demanda asistencial. Objetivo: cuantificar la frecuentación de consultas médicas en niños con SAHS durante 5 años y compararla con una población sana.

Métodos: Estudio casos-control longitudinal ambispectivo en un hospital del sistema nacional de salud. Reclutamos a 69 niños remitidos por SAHS sin otras patologías para que la demanda asistencial fuera predominantemente atribuida al SAHS. Se seleccionó a otros 69 niños sanos como grupo control. Obtuvimos datos de frecuentación durante 5 años: el año en el que se realizó el tratamiento del SAHS («año 0»), 1 y 2 años antes («año -1» y «año -2»), y 1 y 2 años tras el tratamiento («año +1» y «año +2»).

Resultados: El índice de frecuentación (IF), descrito como cociente entre demanda asistencial por los niños con SAHS y niños sanos, fue 1,89 durante el año -2 y 2,15 durante el año -1 ($p < 0,05$). El tratamiento disminuyó la utilización, con IF de 1,59 durante el año +1 y 1,72 en el año +2 ($p < 0,05$). Las principales causas de sobrefrecuentación fueron otorrinolaringológicas y neumológicas.

Conclusiones: Los niños con SAHS muestran mayor demanda asistencial, al menos 2 años antes del tratamiento, lo que implica un deterioro de la salud global que pudiera estar presente años antes de que la abordemos. El tratamiento repercute en una mejora, aunque permanece alta tras el tratamiento, sugiriendo enfermedad residual o secuelas.

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Introduction

Obstructive Sleep Apnoea-Hypopnoea Syndrome (OSAS) is a respiratory problem which occurs during sleep and may be associated with several changes on different levels: cardiovascular,^{1,2} metabolic,³⁻⁵ neurophysiological^{6,7} and others. Night-time apnoea episodes may affect the overall health status of the child, but it is an abstract concept and quantification may therefore be complicated. We propose to estimate overall health and its repercussions for children who are suffering from OSAS whilst analysing the demand for health services.

Frequentation, defined as the number of medical consultations per inhabitant in one year, is an indicator which is used to describe and plan organisational and financial aspects but which may also be used as an indirect measure of the impact of any illness on health status or morbidity. In fact, the study of healthcare demands has frequently been used in the research of several aspects of chronic illnesses.⁸⁻¹¹ In the case of adults with OSAS, greater use of resources has been shown to occur, compared with healthy controls prior to diagnosis,¹²⁻¹⁷ and this improves with CPAP treatment.¹⁸

However, few studies exist regarding healthcare demands of children with OSAS, and all those that do exist have been conducted in the same geographical area.¹⁹⁻²¹ All publications emphasise that healthcare demand is higher, and has a tendency to fall following adenotonsillectomy.

The aim of our study was to analyse healthcare demands of children who presented with OSAS in our national health system healthcare area, for 5 years of their lives (from 2 years prior to treatment, the same year of treatment and 2 years after it), with a case-control study. Data

interpretation was designed to discover new traits of the disease, such as natural evolution, treatment effectiveness or the possibility of sequelae.

This study is the longest period of published frequentation observation, in particular regarding the period following treatment.

Methods**Study Design**

A longitudinal, case-control study. It was ambispective due to the fact that the information regarding the patient admitted to hospital for OSAS was recorded prospectively and this comprised the majority of data, and the information regarding healthcare demand for the 2 years prior to this was recorded retrospectively.

Scope

The study was conducted in our National Health Service hospital, offering medical cover to 97.5% of the population (350 000 inhabitants). The study included patients referred for study and treatment of their OSAS during the 2006-2011 period.

Sample

154 children (<16 years of age) were enrolled in the study, and who were referred consecutively with clinical suspicion of OSAS. Children who presented with the following criteria were excluded:

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