



ORIGINAL ARTICLE

Overlap syndrome – Asthma and obstructive sleep apnea



D. Madama*, A. Silva, M.J. Matos

Pulmonology Department, Coimbra Hospital and University Centre, Portugal

Received 8 March 2015; accepted 14 August 2015
Available online 24 October 2015

KEYWORDS

Overlap syndrome;
Obstructive sleep
apnea;
Asthma

Abstract

Introduction: Asthma is a chronic inflammatory disease with multiple phenotypes. There is still a major gap in the understanding of its complex causality. Obstructive sleep apnea (OSA) is a common condition that has been implicated as a risk factor for asthma exacerbations.

Objectives: This study aims to characterize patients with the diagnosis of asthma and suspected OSA; identify the presence of OSA and review, on the current literature, the association between asthma and OSA, as an overlap syndrome.

Materials and methods: The authors present a retrospective study that included patients diagnosed with asthma that underwent sleep study in a 3 year period. Demographic, clinical data, body mass index (BMI), sleep study parameters and treatments were analyzed.

Results: The sample consisted of 47 patients. The majority of population was females (68%) and the mean age was 55.65 ± 13.04 years. The most common nighttime symptom was snoring (93.6%). Regarding BMI, values above the normal limit were observed in 89.36% of the patients. 68% underwent polysomnography and the others cardiorespiratory polygraphy. In 57.4% of the patients, OSA was confirmed with a higher prevalence in males (73.3%) compared to females (50%). The therapeutic approach in 81.8% of these patients was home ventilation therapy.

Conclusion: The combination of asthma and OSA has become increasingly more frequent. In the described study, the prevalence of OSA was 57.4%, value that is in fact higher than in general population. After the therapeutic approach, all patients referred improvement of symptoms. It is therefore essential that OSA is investigated in patients with asthma when there is poor control of symptoms, in order to achieve a better control.

© 2015 Sociedade Portuguesa de Pneumologia. Published by Elsevier España, S.L.U. All rights reserved.

* Corresponding author.

E-mail address: madama.daniela@gmail.com (D. Madama).

Introduction

Asthma is a chronic inflammatory disease with multiple phenotypes related to genetic predisposition and various environmental interactions. There is still a major gap in the understanding of its complex causality and, consequently, in the primary prevention of the disease.¹ Most patients with asthma have mild-to-moderate disease that can be easily controlled with conventional treatment. However, some have uncontrolled asthma despite moderate to high doses of inhaled corticosteroids and long acting β_2 agonist and/or leukotriene modifier combinations. Factors that influence asthma control, such as environmental exposure, comorbidities, adherence, and inhalation technique, should be identified and adequately addressed.²

Quality of sleep in patients with asthma is poorer, compared to those with chronic obstructive pulmonary disease. Whereas some comorbid conditions, such as rhinitis and gastroesophageal reflux disease (GER), are well recognized to aggravate asthma, little is known about the potential role of obstructive sleep apnea.³ OSA is characterized by episodes of complete or partial upper airway obstruction during sleep. It is known that it induces intermittent hypoxemia, carbon dioxide retention and changes in hemodynamic responses during sleep.

The first study examining asthma and OSA was a case report by Hudgel and Shrucard, in 1979.⁴ Since then, asthma and OSA are increasingly troublesome public health issues. Mounting evidence implicates OSA as a risk factor for asthma exacerbations,⁵ therefore it is imperative to look further into the connection between these two entities.

Objective

This study aims to characterize the patients (demographic analysis, symptoms, body mass index (BMI)) admitted in a Pulmonology Department with the diagnosis of asthma and suspected OSA. It also aims to review the existing literature on a possible association between asthma and OSA, as an overlap syndrome like the known combination "OSA and COPD". Assess the effect of treatment of OSA on asthma symptoms was also an objective of the literature review.

Materials and methods

The authors present a retrospective study carried out in a period of three years in an Immunoallergology Department which included patients followed in an outpatient clinic and diagnosed with asthma. During this period, patients diagnosed with asthma underwent a structured survey during the consultation, in order to ascertain symptoms suggestive of OSA, namely symptoms of daytime sleepiness, snoring, choking or gasping during sleep, recurrent awakenings, unrefreshed sleep, daytime fatigue, and impaired concentration. All patients were also evaluated using the Epworth Sleepiness Scale.

The patients who reported characteristic symptoms of OSA underwent overnight sleep study. According to the American Association of Sleep Medicine 2009 Guidelines, the patients with high risk of OSA underwent cardiorespiratory study in the absence of significant comorbidities.

The remaining patients underwent polysomnography study (PSG). Patients with negative cardiorespiratory study were subsequently subjected to PSG for diagnostic confirmation.

Demographic and clinical data, BMI, sleep study parameters of the enrolled patients were gathered and analyzed using Microsoft Office Excel 2007®. Using the available data, a revision of the current literature was made, and MEDLINE and PubMed databases from 2000 to the present were searched for relevant articles regarding the association of OSA and asthma as an overlap syndrome. Particularly, articles describing pathophysiologic conditions occurring in OSA that may be linked to asthma pathogenesis were used for this review, as well as articles referring to the therapeutic approach in these patients.

Results

The sample consisted of 47 patients with asthma and symptoms suggestive of OSA, with female predominance (68%). Table 1 shows some demographic and clinical characteristics of the patients divided into two groups: patients with OSA and without OSA. It was observed that patients with OSA were older than those without OSA (59 years vs 48.7 years), fact that was statistically significant ($p=0.0158$ with 95% confidence interval). It is also important to refer that regarding BMI, values above the normal limit were observed in 42 (89.36%) patients, 28 (87.5%) females and 14 (93.3%) males. However, in both groups, similar values of BMI were observed. In the group with OSA, 40.7% were overweight and 55.6% were obese. In the group without OSA, 35% were overweight and 45% were obese. In this group it was registered a higher number of patients with normal BMI (3.7% vs 20%).

All the evaluated patients reported night symptoms, the most common was snoring (93.6%) and no differences were registered between the two groups. The patients also referred choking or gasping during sleep (57.4%), excessive daytime sleepiness (EDS) (36.2%), morning headaches (29.8%) and unrefreshing sleep (19.1%). Concerning the Epworth Sleepiness Scale, 22 (46.81%) patients had a score higher than 10 and the mean value was 11.

In terms of the medication use, 21.3% of the patients only recurred to quick relief medication, such as short-acting inhaled beta-agonists. Most patients (53.2%) presented with symptoms of controlled asthma, under fixed inhaled association between long-acting beta-agonists and low-dose inhaled corticosteroids. 19.1% of the patients, needed the association of a leukotriene modifier, as well as medium or high-dose of inhaled corticosteroids. And finally the most symptomatic patients (6.4%) were under oral corticosteroids.

Regarding the lung function testes, spirometry revealed values within the normal range in 69% of the patients. In the remaining patients, an obstructive pattern was detected, according to the values of the FEV1/CVF ratio. The mean value of this parameter was 77.8% ($\pm 12.5\%$). The values of FEV1 varied between 35.1% and 127.8%, the mean value was 95% ($\pm 22.7\%$). The obstruction was considered mild in 8% of the patients, moderate in 10% and severe in 5%. CPT was normal in all patient, as expected. DLCO was determined only in 36% of the patients, and in all cases the value was within normal range.

Download English Version:

<https://daneshyari.com/en/article/4214599>

Download Persian Version:

<https://daneshyari.com/article/4214599>

[Daneshyari.com](https://daneshyari.com)