



Original Investigation

Comorbidity of sleep apnoea syndrome in patients with fibromyalgia in a sleep clinic[☆]



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ABSTRACT

Introduction: Fibromyalgia syndrome (FMS) is characterized by chronic musculoskeletal pain, fatigue, and the sense of waking unrefreshed. Obstructive sleep apnoea syndrome (OSAS) and FMS have symptoms in common and the association of OSAS in these patients could confuse the diagnosis and worsen the severity and prognosis of FMS. The objective of this study was to establish the presence of OSAS in patients with FMS and sleep complaints in a sleep clinic.

Methods: A cross-sectional study was conducted in patients aged 18 and above with FMS who were referred by rheumatology to a sleep clinic to confirm OSAS with polysomnography from 2015 to 2018. Descriptive statistics tools were applied.

Results: Polysomnographic investigations were performed in 51 patients with FMS. OSAS was detected in 82% of patients. The mean age was 65 years. Of the patients studied, 82% were women and 78% of them had OSAS. All the male patients with FM had OSAS. Of the patients, 27.5% were normal weight and 45% were overweight. Of the patients, 23% had severe OSAS, 31% moderate and 45% mild.

Conclusion: We found a high frequency of OSAS in this group of FMS patients. Since the 2 diseases share symptoms, it is interesting to delve deeper into the investigation of common pathophysiological mechanisms. The coexistence of the 2 pathologies poses diagnostic and therapeutic challenges that implies the need for further study at local level.

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Comorbilidad de síndrome de apnea del sueño en pacientes con fibromialgia en una clínica de sueño

R E S U M E N

Palabras clave:

Fibromialgia
Síndromes de la apnea del sueño
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Introducción: La fibromialgia (FM) se caracteriza por dolor crónico, cansancio y sueño no reparador. El síndrome de apnea hipopnea obstructiva del sueño (SAHOS) tiene síntomas en común con la FM y su presencia puede confundir el diagnóstico y empeorar la gravedad y el pronóstico de la FM. El objetivo de este estudio fue establecer la presencia de SAHOS en pacientes con FM y alteraciones del sueño en una clínica de sueño.

Métodos: Estudio observacional, de corte transversal, en pacientes mayores de 18 años con FM remitidos por Reumatología a una clínica de sueño para confirmar SAHOS por medio de polisomnografía, entre el 2015 y el 2018. Se aplicaron herramientas de estadística descriptiva.

Resultados: Se realizó polisomnografía completa a 51 pacientes con FM y se confirmó SAHOS en el 82%. La edad media fue de 65 años. El 82% de los pacientes estudiados fueron mujeres y, de estas, el 78% tuvo SAHOS. Al 100% de los hombres con FM se les diagnosticó SAHOS. El 27,5% tuvo un peso normal y el 45% sobrepeso. El 23% de los pacientes tuvo SAHOS grave, el 31% moderado y el 45% leve.

Conclusiones: Encontramos una alta frecuencia de SAHOS en este grupo de pacientes con FM. Las 2 enfermedades comparten síntomas, por lo que es interesante profundizar más en la investigación de mecanismos fisiopatológicos comunes. La coexistencia de las 2 patologías plantea retos diagnósticos y terapéuticos que vislumbran la necesidad de estudios más profundos a escala local.

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Introduction

Fibromyalgia (FM) is a disease characterized by chronic diffuse musculoskeletal pain of non-articular origin, associated with unrefreshing sleep and fatigue. The proposed pathophysiological mechanism is based on central sensitization, sleep deficit, psychosocial stress, physical trauma, and genetic and endocrine factors.¹⁻³

The worldwide prevalence of FM is 2-8% and women are most commonly affected.⁴ In Colombia, the estimated prevalence is 0.72%, with equal predominance in the female gender.⁵

The diagnosis of FM is clinical and, as there is no confirmatory test, is based on the symptoms reported by the patients and on the exclusion of other diseases.^{6,7}

In 2011, the American College of Rheumatology recommended that, in addition to evaluating pain as the main symptom, other types of symptoms, such as those related to sleep, fatigue, cognitive difficulties and other somatic symptoms, should be studied in greater depth to establish the diagnosis of FM.^{8,9}

In the general population, the most frequent sleep disorders are insomnia and obstructive sleep apnea hypopnea syndrome (OSAHS). In patients who suffer from FM and OSAHS at the same time, unrefreshing sleep and generalized pain are common. İnönü et al. evidenced a prevalence of OSAHS of 50% (n = 12) in patients with FM and sleep disturbances.¹⁰

Some authors associate insomnia and OSAHS with chronic widespread pain and propose sleep deprivation and apnea as causes of pain syndromes in patients with rheumatic disease.¹¹⁻¹⁴ Indeed, in relation to the treatment of both diseases, Marvisi et al. studied the effect of CPAP on the mitigation of FM symptoms in patients with FM and OSAHS.¹⁵

One hypothesis that may explain the relationship between sleep apnea and FM is the alteration of sleep slow waves. The reduction of sleep slow waves is associated with worsening of pain and increased central sensitization to both painful and non-painful stimuli. In OSAHS, these waves are altered, which could be one of the pathophysiological keys to link this syndrome with the increase in generalized pain typical of FM.¹⁶

No studies on the comorbidity of OSAHS in patients with FM in Colombia are known. Considering the possible repercussions of having both diseases, we sought to characterize and measure the presence of OSAHS in a group of patients with FM and sleep disorders, referred from a rheumatology clinic to a sleep clinic.

Methods

A descriptive observational cross-sectional study was developed. Information was collected from all patients referred by Rheumatology with a diagnosis of FM and sleep complaints to a sleep clinic in the city of Cucuta (Colombia) between January 1, 2015 and August 1, 2018.

Rheumatology established the diagnosis of FM in a rheumatology center, according to the modified criteria of the American College of Rheumatology.⁸ Then, the presence of symptoms related to sleep was inquired about and those who had FM and sleep complaints, such as insomnia or fragmented sleep were referred to Pneumology.

Pneumology assessed all the patients and requested a complete baseline polysomnography to confirm or rule out OSAHS.

The apnea hypopnea index (AHI) was calculated by the number of episodes of apnea plus hypopnea per hour of sleep. The patients with AHI ≥ 5 events/h were diagnosed with OSAHS, whereas those with AHI between 5 and 15 were classified as mild and those who had between 15 and 30 events per hour as moderate; those who had AHI > 30 were considered severe, according to the criteria of the American Association of Sleep Medicine.¹⁷

The inclusion criteria were:

- Being 18 years of age or older.
- Having been referred by Rheumatology with a confirmed diagnosis of fibromyalgia and some sleep complaint.
- Having a polysomnographic record.

The study was approved by the Ethics Committee of the Clínica Neumológica y del Sueño.

Prior to the baseline polysomnography, data were collected according to institutional protocol, related to weight, height, gender, age, Epworth scale, and neck circumference.

The baseline polysomnographies were performed at the Clínica Neumológica y del Sueño with Alice 6 LDE and SleepVirtual BWII PSG polysomnographs according to the criteria of the American Association of Sleep Medicine with simultaneous measurement of electroencephalography, electrooculogram, submental and anterior tibial electromyography, electrocardiography, body position sensor, microphone for snoring, thoracic and abdominal movement, nasal cannula for flow measurement and pulse oximetry.

Data analysis

The quantitative variables were presented as arithmetic means $\pm$ standard deviations and the rest of the qualitative variables as numbers and their percentages.

Results

Of the 73 patients referred by Rheumatology with a diagnosis of FM, 51 underwent baseline polysomnography and were included in the study. The rest were excluded because they did not attend the exam.

The mean age of the sample was 65.14 ± 17.63 years. 82% of the patients studied were women and, of them, 78% had OSAHS. All men referred with fibromyalgia had associated OSAHS. 27.5% of the patients had a normal body mass index and 45% were overweight (Table 1).

OSAHS was confirmed in 82%; 23% were severe, 31% moderate and 45% mild (Table 2).

Table 1 – Sociodemographic and clinical characteristics of patients diagnosed with fibromyalgia at the Clínica Neumológica y del Sueño, years 2015-2018.

Variable	Mean	SD
Age	65.14	17.63
	Number	%
Gender		
Female	42	82.35
Male	9	17.65
BMI (kg/m^2)		
<18.5 : underweight	0	0
18.5 - 24.9 : normal	14	27.50
25 - 29.9 : overweight	23	45
≥ 30 obesity	14	27.50
Presence of OSAHS		
Present	42	82.4
Absent	9	17.6
Epworth sleepiness scale		
0-9 points	28	54.9
10-24 points	23	41.5
Neck circumference (cm)		
≤ 41	47	92.2
> 41	4	7.8
BMI: body mass index.		

Table 2 – Characteristics of the patients with fibromyalgia and OSAHS.

Variable	Patients with OSAHS (+)	
	FM (+)	
	Mean	SD
Age	57.57	12.33
BMI	27.56	4.26
	Number	%
Gender		
Female	33	78.60
Male	9	21.40
Severity of the OSAHS		
Mild	19	45.2
Moderate	13	31
Severe	10	23.8
BMI: body mass index; OSAHS: obstructive sleep apnea-hypopnea syndrome.		

Discussion

A high frequency of OSAHS was found in this group of patients with FM and sleep disorders.

The prevalence of OSAHS in the general population is 10% in men aged 30-49 years, 17% in men aged 50-70 years, 3% in women aged 30-49 years and 9% in women aged 50-70 years.¹⁸

In some studies, a high frequency of coexistence of both diseases is observed. In a recent work, İnönü et al. found 12 cases of OSAHS (50%) in 24 patients with FM, while another study reported 65.9% of OSAHS in women with FM.^{10,19}

On the other hand, when the case of patients with OSAHS was analyzed and associated FM was sought, a lower prevalence was found, as in the study conducted by Marvisi et al., in which 900 patients with OSAHS were studied and only 15% had FM.¹⁵

In the present study, the majority of patients with FM were women (82%), which is in agreement with the predominance of FM in women over men, at a ratio of 3:1.²⁰⁻²²

Likewise, we found that, of the 42 women studied, 78% had associated OSAHS, while in the group of men, 100% had it. This finding correlates with studies that indicate that FM can be a hidden marker of OSAHS in men.²³ On the other hand, Germanowicz et al. looked for FM in patients with OSAHS and detected associated FM in 9 out of 18 women and only in 2 out of 32 men,²⁴ so there is no clarity about the gender predominance in the association.

Meresh et al. sought the association of the 2 diseases and it was more common to find OSAHS in patients diagnosed with FM in a sleep clinic (85.8%) than in a psychiatric (42.0%), rheumatology (18.7%) or in other outpatient clinics (3.6%), which indicates a possible bias in the study of patients according to the specialty of the center that treats them.²⁵

Some studies report unrefreshing sleep with a frequency of 70-80% in patients with FM. Being a symptom shared with OSAHS, it is interesting to search for common pathophysiological pathways between the 2 diseases to better understand the clinical behavior of both conditions.²⁶

Since the treatment of FM represents a challenge for the clinician, the comorbidity between FM and OSAHS can make its management more complex. One study compared the clinical outcomes of patients with FM and OSAHS treated with CPAP versus patients with a single diagnosis of FM treated conventionally. The results showed that the OSAHS group had better control of symptom severity.¹⁵ According to this, the confirmation of the presence of the combination of the 2 diseases in these patients would improve their therapeutic approach.

The limitations of the study include the possible selection bias due to the fact that the characteristics of 22 patients excluded from the study for not having polysomnography are unknown, as well as the absence of a sampling process. Another limitation is that only FM patients who had a sleep complaint were referred and the rest were excluded from the study.

Multicenter prospective studies are needed to confirm these findings and investigate the response to CPAP in patients with both diseases.

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Conflict of interest

None.

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