



ORIGINAL ARTICLE

Cardiovascular risk and obesity in sleep apnea syndrome assessed with the Stop-Bang questionnaire[☆]

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KEYWORDS

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Sleep
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Obesity

Abstract

Introduction: Sleep disorders include a number of different processes, of which the most prevalent is the sleep apnea-hypopnea syndrome (SAHS).

Prevalence of SAHS has increased worldwide, and has a significant social and health impact because of the increased cardiometabolic risk attributed to obesity and the associated metabolic syndrome.

Material and methods: A cross-sectional epidemiological study of 1110 workers from public service companies in the Spanish Mediterranean area (Balearic Islands and Valencian Community) was conducted between January and December 2015. Cardiovascular risk was calculated using the Castelli, Kannel and TG/HDL indices, and prevalence of obesity using body mass index, waist circumference, waist-height ratio, and visceral fat. SAHS risk was assessed using the Stop-Bang questionnaire.

Results: Risk of SAHS was low in 77% of patients and intermediate-high in 23% of patients. All obesity parameters showed a statistically significant association ($p < 0.001$) with intermediate/high risk of SAHS. Obesity prevalence is higher the worse the quality of sleep. There was a statistically significant relationship between risk of SAHS and cardiovascular risk with the atherogenic indexes found.

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PALABRAS CLAVE

Riesgo cardiovascular;
Síndrome de apnea-nipopea del sueño;
Cuestionario Stop-Bang;
Obesidad

Conclusions: Twenty-three percent of workers had intermediate/high SAHS risk. The results of this study support the relationship of SAHS with an increased CVR and with obesity parameters.

Further prospective studies in different productive sectors may be useful to confirm the results of this research.

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Riesgo cardiovascular y obesidad en el síndrome de apnea del sueño valorado con el cuestionario Stop-Bang

Resumen

Introducción: Los trastornos durante el sueño engloban un conjunto de procesos diversos, de los que el más prevalente es el síndrome de apnea-hipopnea del sueño (SAHS).

La prevalencia del SAHS ha aumentado en todo el mundo, y tiene importante repercusión sociosanitaria por riesgo cardiometabólico aumentado atribuido a la obesidad y al síndrome metabólico asociado.

Material y método: Estudio epidemiológico transversal en 1.110 trabajadores de empresas del sector servicios de la Administración Pública del área mediterránea española (Islas Baleares y Comunidad Valenciana), realizado entre enero a diciembre de 2015. Se calcula el riesgo cardiovascular con los índices de Castelli, Kannel y TG/HDL y la prevalencia de obesidad mediante el índice de masa corporal, perímetro de cintura, índice cintura-altura y grasa visceral. Se valora el riesgo de SAHS mediante el cuestionario Stop-Bang.

Resultados: El 77% de los pacientes tienen un riesgo bajo de SAHS frente al 23% con riesgo intermedio-alto. Todos los parámetros de obesidad muestran asociación estadísticamente significativa (p valor < 0,001), con riesgo intermedio/alto de SAHS. Hay mayor prevalencia de obesidad cuanto peor es la calidad del sueño. Se observa relación estadísticamente significativa entre el riesgo de SAHS y el cardiovascular con los índices aterogénicos estudiados.

Conclusiones: Un 23% de los trabajadores presentaban riesgo intermedio/alto de SAHS. Los resultados de este estudio apoyan la relación del SAHS con el incremento del RCV y con los parámetros de obesidad.

Estudios posteriores prospectivos en diversos sectores productivos pueden resultar de utilidad para confirmar los resultados obtenidos en este trabajo.

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Introduction

Sleep respiratory disorders encompass a number of conditions, the most prevalent of which is obstructive sleep apnea-hypopnea syndrome (OSAHS), with recurrent airway restriction episodes resulting from anatomical and functional changes in the upper respiratory tract that cause them to collapse. This causes decreased oxyhemoglobin saturation levels and micro-awakenings, non-restorative sleep, and excessive daytime sleepiness, as well as neuropsychiatric, respiratory, and cardiac disorders.¹

OSAHS prevalence is very high, ranging from 3% to 6% in Spain.² Current estimations vary depending on age and sex: 10% of moderate to severe cases in males aged 30–49 years; 17% in males aged 50–70 years; 3% in females aged 30–49 years and 9% in older females. These rates have increased 14–55% depending on the subgroup in the past two decades.³

Studies conducted in different age groups show that there are in Spain 1,500,000–2,500,000 patients with OSAHS, plus an unknown number of asymptomatic patients with risk factors and pathological apnea-hypopnea index. Only 25% of

them are being treated, but this is a much greater proportion as compared to the 4%–6% of patients on treatment in previous years.⁴

The increased prevalence of OSAHS worldwide has a great social and health impact because it increases the cardiometabolic risk partly attributed to obesity and metabolic syndrome in affected patients.⁵

There are different questionnaires to assess OSAHS, including the Stop-Bang Questionnaire, which is considered to be the most effective, with a sensitivity of 93–100% and a specificity of 43%.⁶ Early detection, control and treatment of OSAHS are especially important because they reduce secondary conditions and save health resources from the silent or preclinical stage of the disease. Patients with OSAHS not diagnosed or treated consume two to three times more resources than the general population, and incur 50–100% higher healthcare costs.^{7,8}

Obesity is a major cause of sleep disorders, while atherogenic complications deserve special mention among their consequences. Clinical manifestations of atherosclerosis do not usually appear until advanced age, but the atherogenic

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