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ORIGINAL ARTICLE

Erectile dysfunction in obstructive sleep apnea syndrome—Prevalence and determinants☆

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KEYWORDS
Sleep apnea;
Obstructive;
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Aging;
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Abstract
Introduction: OSAS (obstructive sleep apnea syndrome) is defined by recurrent episodes of upper airway obstruction during sleep, causing multiple clinical consequences. Literature review suggests that OSAS induces a spectrum of abnormalities in neural, hormonal and vascular regulation that contribute to the development of ED (erectile dysfunction).

The aims of this study were to estimate the prevalence of ED in OSAS patients and evaluate its determinants.

Methods: 62 patients from Hospital S. João Sleep Laboratory with newly diagnosed OSAS were included in the study and answered the IIEF-5 (international index erectile function 5 item version) questionnaire.

Results: The prevalence of ED in OSAS patients was 64.4%. Age and diabetes constituted themselves as independent risk factors for more severe degrees of ED: OR = 1.226 (95% CI: 1.062–1.415) and OR = 31.205 (95% CI: 1.222–796.557), respectively. Compared with nonsmokers, ex-smokers group revealed a positive association with ED: OR = 4.32 (95% CI: 1.09–17.11). Hypertension and ACEI (angiotensin converting enzyme inhibitors) or ARB (angiotensin II receptor blockers) therapy were also correlated to ED symptoms: OR = 3.25 (95% CI: 1.09–9.65) and 7.39 (95% CI: 1.52–35.99), respectively.

No association was found relating BMI ($p = 0.254$), alcoholic habits ($p = 0.357$), acute myocardial infarction ($p = 0.315$), dyslipidemia ($p = 0.239$), metabolic syndrome ($p = 0.215$) and ED.

OSAS severity was not associated with ED in our sample.

Conclusions: The prevalence of ED in OSAS patients is high. ED determinants in our sample were age and diabetes. Past smoking habits, hypertension and ACEI/ARB therapy also revealed a statistically significant association with ED.

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PALAVRAS-CHAVE
Apneia obstrutiva do sono;
Disfunção erétil;
Envelhecimento;
Diabetes mellitus;
Hipertensão

Disfunção erétil na síndrome de apneia obstrutiva do sono – Prevalência e determinantes

Resumo
Introdução: A SAOS (síndroma de apneia obstrutiva do sono) define-se pela ocorrência frequente de obstrução da via aérea superior durante o sono, com múltiplas consequências clínicas. Estudos anteriores sugerem que a SAOS provoca alterações na regulação neural, hormonal e vascular que contribuem para o desenvolvimento de DE (disfunção erétil).

Este estudo tem como principais objetivos estimar a prevalência da DE numa amostra de doentes com SAOS e avaliar os seus determinantes.

Métodos: Foram incluídos 62 doentes do Laboratório do Sono do Hospital S. João com diagnóstico recente de SAOS, que responderam ao questionário IIEF-5 (International Index Erectile Function-5 Item version).

Resultados: A prevalência da DE em pacientes com SAOS foi de 64,4%. A idade e a diabetes constituíram fatores de risco independentes para graus avançados de DE: OR = 1,226 (IC 95%:1,062–1,415) e OR = 31,205 (IC 95%:1,222–796,557), respetivamente. Comparados com pacientes fumadores, o grupo de pacientes ex-fumadores revelou associar-se à DE: OR = 4,32 (IC 95%:1,09–17,11). A hipertensão e o tratamento com IECAS (inibidores da enzima conversora da angiotensina) ou ARA (antagonistas dos recetores da angiotensina) evidenciaram uma associação com DE: OR = 3,25 (IC 95%:1,09–9,65) e 7,39 (IC 95%:1,52–35,99), respetivamente.

Não foi encontrada nenhuma relação no que diz respeito ao IMC (p = 0,254), hábitos alcoólicos (p = 0,357), enfarte agudo do miocárdio (p = 0,315), dislipidemia (p = 0,239), síndrome metabólico (p = 0,215) e DE.

A gravidade da SAOS não se encontra associada a DE na amostra estudada.

Conclusões: A prevalência da DE em doentes com SAOS é elevada. Os determinantes da DE na amostra estudada foram a idade e a diabetes. Ex-fumadores, hipertensão e tratamento com ACEI/ARB também revelaram uma associação estatisticamente significativa com a DE.

Introduction

Erectile dysfunction (ED) is defined as the consistent inability to obtain and/or maintain a penile erection which is sufficient to permit satisfactory sexual intercourse.[1,2] The prevalence of ED is estimated at 48% among Portuguese men aged 40–69 years old.[3]

Obstructive sleep apnea syndrome (OSAS) is characterized by repetitive collapse of the upper airway due to the laxity of pharyngeal dilator muscles[4] during sleep.

OSAS affects 4% of men between 30 and 60 years,[5] but it is believed that the proportion of clinically diagnosed OSAS is underestimated.[6–8] This is one of the most important medical conditions to have been identified in the last 50 years.[9] It is related to increased morbidity and mortality due to clinical complications such as hypertension,[10] congestive heart failure,[11] acute myocardial infarction,[12] stroke,[13] diabetes,[14] cognitive dysfunction[15] and depression.[16]

In every REM sleep stage most men experience a sleep related erection (SRE),[17] an event that ensures functional and morphological integrity to erectile tissue.[18] In OSAS, intermittent hypoxic events and sleep fragmentation limit SRE, with serious consequences for erectile physiology.[19–22] The literature review also defines hormonal,[23–26] neural,[27–30] endothelial[31–35] and psychogenic[16] mechanisms to explain ED complaints in OSAS.

OSAS and ED may also be connected through comorbidities such as hypertension and diabetes.[21]

As there are some inconsistencies in regard to the prevalence data,[18] the main purpose of this study was to estimate the prevalence of ED in a population of OSAS patients sent to Hospital S. João for diagnosis and follow-up. Additionally, clinical and demographic information was collected to obtain the ED determinants in our population.

Methods

Study population

Between 28 September and 31 December 2010, all men admitted ($n = 207$) to S. João Hospital Sleep Laboratory for a first medical appointment because of suspected OSAS, were invited to participate in the present study. Each patient received written information about the study, an Informed Consent form and an IIEF-5 questionnaire for them to complete.

Ninety-five patients returned the completed questionnaire, 33 patients were excluded after sleep study as they did not present OSAS and one was excluded because of a previous diagnosis of ED.

Information about BMI, previous medical history (diabetes, hypertension, stroke, acute myocardial infarction) and usual pharmacological therapy was obtained from medical files.