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ORIGINAL ARTICLE

Obstructive sleep apnea in postmenopausal women: a comparative study using drug induced sleep endoscopy[☆]

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KEYWORDS

Sleep apnea syndrome;
Endoscopy;
Gender;
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Abstract

Introduction: The key to successful treatment of OSAS is to individually tailor such treatment. Thus, it is very important to determine the severity of OSAS, its pattern, and the extent of collapse, by gender, age, and BMI.

Objective: The objective of the study was to understand the characteristics of obstructive sleep apnea in postmenopausal women by comparing postmenopausal and premenopausal subjects, and men, using DISE. We hope that our work will help the medical community to consult on, diagnose, and treat OSAS more effectively.

Methods: A total of 273 patients (195 males and 78 females) diagnosed with OSAS were enrolled. Female patients were divided into pre-menopausal ($n=41$) and post-menopausal patients ($n=37$). The group of post-menopausal female patients was matched with a group of male patients with similar age and body mass index (BMI). DISE findings were compared between pre-menopausal female patients and post-menopausal female patients, and also between post-menopausal female patients and male patients matched for age and BMI.

Results: Upon PSG examination, post-menopausal patients (who had a significantly higher BMI than did pre-menopausal patients; 25.6 kg/m^2 vs. 23.5 kg/m^2 ; $p=0.019$) tended to have a higher AHI and a lower lowest SaO₂, but the differences did not attain statistical significance. With DISE analysis, post-menopausal female patients showed higher values in all obstruction sites, with significantly higher value in lateral diameter of retropalatal (1.49 vs. 0.90 ; $p=0.001$) and retrolingual levels (1.14 vs. 0.61 ; $p=0.003$) compared to pre-menopausal females patients. Post-menopausal female patients showed significantly more retrolingual collapse (antero-posterior,

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AP, $p \leq 0.0001$, and lateral diameter, $p=0.042$) in the lower BMI group (BMI < 25) and more concentric retropalatal collapse (lateral diameter, $p=0.017$ and tonsillar obstruction, $p=0.003$) in higher BMI group (BMI ≥ 25) than BMI and age matched male patients.

Conclusion: Post-menopausal female patients showed a different pattern of airway obstruction compared to pre-menopausal female patients and male patients matched for age and BMI based on DISE findings.

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PALAVRAS-CHAVE

Síndrome da apneia do sono;
Endoscopia;
Gênero;
Menopausa

Apneia obstrutiva do sono em mulheres na pós-menopausa: estudo comparativo usando endoscopia do sono induzido por fármaco

Resumo

Introdução: A chave para o sucesso do tratamento da SAOS é adaptar individualmente esse tratamento. Assim, é muito importante determinar a gravidade da SAOS, seu padrão e a medida do colapso, por sexo, idade e IMC.

Objetivo: O objetivo do estudo foi compreender as características da apneia obstrutiva do sono em mulheres na pós-menopausa, comparando mulheres na pós-menopausa e pré-menopausa, e homens, usando DISE. Esperamos que o nosso trabalho ajude a comunidade médica a consultar sobre, diagnosticar e tratar a SAOS de maneira mais eficaz.

Método: Um total de 273 pacientes (195 do sexo masculino e 78 do sexo feminino) com diagnóstico de SAOS foi inscrito. As pacientes do sexo feminino foram divididas em pacientes na pré-menopausa ($n=41$) e na pós-menopausa ($n=37$). O grupo de pacientes do sexo feminino na pós-menopausa foi combinado com um grupo de pacientes do sexo masculino com idade e Índice de Massa Corporal (IMC) semelhantes. Os achados da DISE foram comparados entre as pacientes do sexo feminino na pré-menopausa e as pacientes do sexo feminino pós-menopausa e também entre pacientes do sexo feminino na pós-menopausa e pacientes do sexo masculino pareados por idade e IMC.

Resultados: Após exame de PSG, as pacientes na pós-menopausa (que tinham um IMC significativamente maior do que as pacientes na pré-menopausa; $25,6$ vs $23,5$ kg/m²; $p=0,019$) tendem a ter um IAH superior e uma SaO₂ mínima menor, mas as diferenças não atingiram significância estatística. Com a análise de DISE, pacientes do sexo feminino pós-menopausa apresentaram valores mais elevados em todos os locais de obstrução, com um valor significativamente maior de diâmetro lateral dos níveis retropalatal ($1,49$ vs $0,90$; $p=0,001$) e retrolingual ($1,14$ vs $0,61$; $p=0,003$) em comparação com pacientes do sexo feminino na pré-menopausa. As pacientes do sexo feminino na pós-menopausa apresentaram colapso significativamente mais retrolingual (anteroposterior, AP, $p \leq 0,0001$ e diâmetro lateral, $p=0,042$) no grupo de IMC menor (IMC < 25) e colapso retropalatal mais concêntrico (diâmetro lateral, $p=0,017$ e obstrução tonsilar, $p=0,003$) no grupo de maior IMC (IMC ≥ 25) do que pacientes do sexo masculino pareados com IMC e idade correspondentes.

Conclusão: as pacientes do sexo feminino na pós-menopausa apresentaram um padrão diferente de obstrução das vias respiratórias em comparação com pacientes do sexo feminino na pré-menopausa e pacientes do sexo masculino pareados por idade e IMC com base nos achados de DISE.

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Introduction

Several population based studies across various geographical regions and ethnic groups have reported the prevalence of sleep disordered breathing (SDB) from obstructive sleep apnea syndrome (OSAS). OSAS is a disease that is relatively more common in men than women, especially middle-aged men.¹ And according to various studies, incidence of OSAS in

women increases after menopause.^{1,2} Thus besides gender differences, incidence of OSAS may be due to the influence of hormones changing with age, racial makeup and differences in diet.

Treatment options for OSAS include weight management, use of continuous positive airway pressure (CPAP) machine, and surgical treatment; however, the key to success is in having a personalized management plan. In this respect,

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