The Relationship between Obstructive Sleep Apnea and Age, Gender, EDSS, Disease Duration, and BMI in People with Multiple Sclerosis Who Report Fatigue: More than Size Matters

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Objective: To explore the relationship between obstructive sleep apnea (OSA) and age, gender, EDSS score, disease duration, and BMI in PwMS who report fatigue

Background: Patient reported information relating fatigue, sleep disturbance and presence of OSA may be unreliable. Studies utilizing polysomnography (PSG) to evaluate fatigue in patients with MS are typically limited by the small patient sample size. The presence of OSA is defined by PSG with an Apnea-Hypopnea Index (AHI) ≥5. BMI is frequently utilized to identify patients at risk for OSA (BMI>25) or other sleep disorders.

Design/Methods: Retrospective analysis of PwMS who reported fatigue, were not previously diagnosed as having OSA and who agreed to have overnight PSG studies.

Results: 292 PwMS (average age 47.3 ± 10.7 years, 81.4% female). 61% of PwMS who reported fatigue (n=177) had PSG identified OSA (AHI ≥5). AHI related to age (R=0.254). The incidence of OSA in PwMS: age <30 years old (n=19): 26%, age 30-40 (n=62): 52%, age 40-50 (n=106): 58%, age 50-60 (n=75): 73%, and age >60 (n=28): 82%. No significant relationship between OSA and gender was identified. OSA in PwMS with EDSS 0-2.5 (n=96): 57%, EDSS 3.0-5.5 (n=25): 63%, and EDSS 6.0-8.0 (n=25): 89%. OSA in PwMS disease duration <5 years (n=130): 57%, disease duration between 5-10 years (n=76): 57%, disease duration between 10-15 years (n=51): 67%, and disease duration greater than 15 years (n=18): 72%. OSA was identified in PwMS BMI<28 (n=93): 57% and BMI≥28 (n=131): 71%.

Conclusions: Undiagnosed OSA is common in PwMS who report fatigue. Incidence of OSA in PwMS appears to increase with age. OSA incidence in PwMS increases with EDSS, but is still common in those with low EDSS scores. OSA is more common in people with high BMI, low BMI does not preclude OSA. Accurate identification of specific causes of fatigue in PwMS might improve treatment outcomes.