

## **Association of autonomic dysfunction and mild obstructive sleep apnea.**

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**BACKGROUND:** Autonomic dysfunction (AD) has been independently associated with obstructive sleep apnea (OSA). Autonomic abnormalities are generally considered to be secondary to OSA. Autonomic dysfunction may also contribute to OSA. If AD contributes to OSA, we postulated that abnormalities may be present in mild OSA where the confounding causal effects of hypoxemia and sleep disruption are reduced. **OBJECTIVE:** We evaluated autonomic function tests and sleep studies in a cohort of subjects with no known diagnosis of OSA. **METHODS:** We prospectively enrolled a cohort without diagnosed OSA who were part of an ongoing study of vasomotor rhinitis (VMR) for testing. A battery of autonomic nervous system tests (sudomotor and cardiovagal), nonattended polysomnography, and three-site esophageal/pharyngeal pH monitoring were performed. **RESULTS:** Twenty of 22 patients completed the test battery and 12 (60%) met criteria for OSA (Apnea/Hypopnea Index "AHI" >5 events/hour). AHI correlated to mean tilt table blood pressure decrease ( $R = 0.58$ ,  $P = 0.007$ ) and the Valsalva-mediated phase 2 mean blood pressure decrease ( $R = 0.52$ ,  $P = 0.017$ ). OSA severity was related to sympathetic but not parasympathetic abnormalities. No differences in blood pressure responses were related to age, oxygen desaturation nadir, gastroesophageal reflux, VMR, or sleepiness. **CONCLUSION:** Autonomic abnormalities suggestive of decreased adrenergic tone are associated with mild OSA. These abnormalities may potentially be secondary but may also precede development of OSA.

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