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Sleep apnea is a risk factor for cognitive decline of vascular origin

Clinical evidence suggests that moderate to severe obstructive sleep apnea (OSA) is a risk factor for development of vascular cognitive impairment as a result of cerebral subcortical small vessel disease expressed as leukoaraiosis and silent infarctions. A recent study showed that old women with OSA AHI>15 were more likely to develop cognitive impairment (AOR, 1.85; [95% (CI), 1.11-3.08]. Other authors have shown that OSA AHI>15 is a risk factor for cerebral white matter changes in middle-aged and older patients (OR:2.08 [95% (CI):1.05-4.13]) and for silent cerebral infarction in > 65 y/o patients (OR:2.44 [95% (CI):1.03-5.80]). Intermittent nocturnal hypoxia in patients with moderate to severe OSA contributes to ischemic damage in the cerebral periventricular territory of long penetrating terminal arteries. Blood flow may be already precarious as a result of diabetic vascular autonomic dysregulation and poorly controlled hypertension. Ischemic damage to the cerebral periventricular white matter disturbs the connections of the cortex with the thalamus leading to subcortical dementia characterized by apathy, decreased executive functions, poor memory and in later difficulty walking and urinary incontinence. Treatment of OSA with CPAP may lower cerebrovascular risk by decreasing 24-h urinary catecholamine excretion, improving arterial stiffness, improving baroreflex sensitivity and reducing mean 24-h ambulatory blood pressure. CPAP applications may delay onset of dementia. However, CPAP applications will not modify structural lesions of the brain and therefore early diagnosis and treatment of sleep apnea before structural brain damage ensues is strongly recommended, particularly in patients with several risk factors for stroke.

Biography

Antonio Culebras is a Professor of Neurology, SUNY Upstate Medical University, and consultant in the Sleep Center of Upstate Medical University, Syracuse, New York. He is Certified by the American Board of Psychiatry and Neurology and received his Doctorate of Medicine (PhD equivalent) from the University of Alicante, Spain. He is Certified by the American Board of Psychiatry and Neurology, Sleep Medicine. He has lectured in English and Spanish in over 40 countries. He has published 7 books on sleep disorders, co-edited 2 books on cerebrovascular disease, published over 200 articles in professional journals, and has served or serves in the editorial board of 15 national and international neurological publications.

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