

Response to Letter on “Chronic Respiratory Diseases and Neurodegenerative Disorders: A Primer for the Practicing Clinician”

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Dear Editor,

We thank the letter’s author for the interest and kind comments on our paper [1, 2]. We agree with the author regarding the role of sleep-disordered breathing, especially OSAS, in the risk of incident Alzheimer’s disease (AD). The author also underlined the importance of OSAS in the progression from mild cognitive decline (MCI) to AD and in influencing worse cognitive functions among AD subjects. Accordingly, we published different papers about the issue [3, 4]. Regarding the role and the effectiveness of CPAP treatment in delaying cognitive deterioration, evidence supporting this treatment in preventing cognitive deterioration is increasing. On a molecular basis, AD-OSAS patients show lower A β 42, higher lactate, and higher t-tau/A β 42 ratio in cerebrospinal fluid compared to controls and AD-OSAS patients treated with CPAP, underlining the role of CPAP in reducing the neuronal damage by contrasting the effects of intermittent hypoxia [5].

Regarding the clinical efficacy of OSAS treatment, retrospective studies suggested that CPAP could delay MCI progression [6]. This observation has been recently confirmed by a clinical trial showing that CPAP improved cognition and slowed the MCI trajectory in patients with OSAS [7]. Several randomized controlled trials have shown CPAP efficacy in AD with OSAS in reducing cog-

nitive deterioration [8] by mildly improving executive and frontal-lobe functions, especially in severe OSAS [9], and by increasing verbal learning, memory, and executive functions [10]. Moreover, sustained CPAP use was associated with slower cognitive decline and less depressive symptoms in comorbid OSAS-AD [11]. Despite the above reported evidence, in accordance with the author’s comment, we are aware of some limitations of the published studies and agree with the need for more robust studies supporting the CPAP use in this specific setting. However, since AD pathophysiology seems to be multifactorial, comprising several neurologic and non-neurologic pathways [12], it is possible that the treatment of a single comorbidity could impact only partially cognitive deterioration and in specific cognitive domains, as already observed. Nowadays, treating OSAS with CPAP is part of a correct clinical practice, and the physician must be aware that this practice could reduce incident AD and, in AD/MCI patients, this could improve specific cognitive functions and reduce cognitive deterioration.

Conflict of Interest Statement

The author has no conflicts of interest to declare.

Funding Sources

The author received no financial support for the research, authorship, and publication of this article.

Author Contributions

The authors of the original article (Falsetti L., Viticchi G., Zacccone V., Tarquinio N., Nobili L., Nitti C., Salvi A., Moroncini G. and Silvestrini M.) wrote the draft; Falsetti L. and Silvestrini M. revised it.

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