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Sleep apnea in older adults – is it real and should age be the determining factor in the treatment decision matrix?

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It has been known since the 1980's that the prevalence of sleep apnea is higher in older adults than in younger adults.¹ Our laboratory conducted one of the first large scale studies of over 400 randomly selected adults over the age of 65 and recorded their sleep at home with portable devices.² Only 400, you ask? In the 1980's, 400 was one of the largest studies of sleep recordings. Since that time, card-carrying epidemiologists have joined the field of sleep medicine research.³ These epidemiological studies, done with newer equipment and samples of over 3000 younger and older adults, have confirmed the early results: sleep apnea is more prevalent in the older adult than in the younger adult.⁴⁻⁶

Given this high prevalence, two questions began to arise. The first question was: If sleep apnea is so prevalent in the older adult, is it pathological, i.e., is sleep apnea in the older adult the same as in the younger patient seen in sleep medicine clinics? And the second question was: Should you treat sleep apnea in the older patient and if so, when? Two articles in this issue address these questions.

The first article, by Launois et al.⁷ addresses the questions: When and how should elderly patients be evaluated for sleep disordered breathing (SDB); Should guidelines for treatment in the older adult be the same as those for younger adults? Launois et al. point out that some studies suggest the increased prevalence might reflect changes in the anatomy of the pharyngeal airway or changes in upper airway muscle function. But not all studies have been able to confirm these or other hypotheses. Therefore, while it is clear the prevalence increases, it is not clear why.

The presentation of sleep apnea in the older adult is also not necessarily the same as in the younger adult, and this in part has led to the idea that it might be a different disorder. For example, the older adult with SDB is not necessarily obese (although body mass index is still the best predictor²). Nevertheless, the characteristics attributed to aging are the same as the symptoms attributed to SDB, i.e., snoring, excessive daytime sleepiness, hypertension, cardiovascular disease, cognitive impairment, and nocturia.⁸ So, how much of those symptoms are just part of aging, and how much are they related to occult SDB?

From a clinical standpoint, it likely does not matter what is causing SDB in the older adult. It does not matter if the SDB in the older adult is the same or different from the SDB seen in the younger adult. What matters is whether SDB in the older adult has negative consequences. Launois et al.⁷ address this issue as well. They conclude that most studies suggest that SDB does not increase the risk of mortality in the older adult. *However*, most, albeit not all, studies

suggest that older adults with SDB are excessively sleepy, that SDB may contribute to decreased quality of life, cognitive impairment, and greater risk of nocturia, hypertension and cardiovascular disease. In a recent study by Gooneratne et al.,⁹ which examined older adults with and without insomnia, having both insomnia and SDB was associated with functional impairment, specifically significantly lower daytime functioning and longer psychomotor reaction times. As Launois et al.⁷ conclude, any patient who presents with these symptoms as well as with a history of traffic accidents and repeated falls, should be evaluated for a sleep disturbance. I applaud Launois et al. for their comment that, "Treatment of a symptomatic elderly patient should not be withheld on the basis of age, as the consequence of SDB...can be just as serious in this age group as in younger patients."

That then leads to the second question – does treating sleep apnea in the older adult lead to improvements and will older adults be compliant? Weaver and Chasens¹⁰ address the first question by reviewing the literature on the effect of CPAP on symptoms in older adults. The problem with almost all studies is that they were conducted in either just younger adults or adults of all ages, with no separate analyses by age. Many of Weaver and Chasens's conclusions therefore, are based on extrapolation from these studies, suggesting that we need much more research in older populations.

The few studies that did focus on age certainly point the way for hypotheses to be tested. They suggested that CPAP is effective in reducing or eliminating apneas and hypopneas and improving sleep architecture. They suggested that CPAP is superior to placebo. They suggested that CPAP improves daytime sleepiness. They suggested that CPAP results in improvements of self-reported symptoms such as snoring and gasping. They suggested improvement in measures of motor speed, and nonverbal learning and memory. They suggested that CPAP results in improvements in vascular resistance, platelet coagulability and other factors affecting cardiac function. And, they suggested that CPAP has a positive effect on nocturia, reducing the number of voids per night.

But for CPAP to be effective, patients must be adherent. Can the older adult tolerate CPAP? Weaver and Chasens state that the role of age in predicting adherence to CPAP is unclear.¹⁰ However, studies do support the notion that older adults, even those with mild-moderate Alzheimer's disease, can tolerate CPAP, particularly if an intervention designed to improve adherence is employed.

The bottom line in the Weaver and Chasens review is that CPAP results in decreased daytime sleepiness, improvements in some aspects of cognitive functioning, decreased nocturia and improved aspects of cardiovascular health.¹⁰ And yes, older adults, including those with mild-moderate Alzheimer's disease, do tolerate CPAP. But Weaver and Chasens also conclude that there is a paucity of data in older patients, and thus rightly call for more research to be conducted.

As part of calling for more research, I want to return to the question of daytime sleepiness in the older adult with sleep apnea. Much of the research examining daytime sleepiness relies on the Epworth Sleepiness Scale (ESS),¹¹ a pencil/paper test validated in younger sleep clinic patients, but never in younger or older individuals living in the community. In the older community dwelling adult this might be a particular problem as some may never engage in one or more of the activities listed, such as driving.¹² Since this scale is widely used, it would be appropriate for a validation study in the older population, either of the entire scale as it is written, of the scale minus the driving question or of the scale with an age-appropriate replacement question.

In conclusion, is sleep apnea in older adults the same as sleep apnea in younger adults? We still don't know that answer. Does it matter if it is the same phenomena as in younger adults?

From a scientific standpoint, identifying pathogenetic mechanisms may help target new therapies. But not having these answers should not be the driving force behind the decision to treat or not to treat. Clinically it probably does not matter if SDB is the same phenomena in older as in younger adults. The key is the clinical presentation of and consequences of sleep apnea. The bottom line is, if the sleep apnea is associated with clinical symptoms, then it should be treated, regardless of the age of the patient.

References

1. Ancoli-Israel S, Kripke DF, Mason W, Messin S. Sleep apnea and nocturnal myoclonus in a senior population. *Sleep* 1981;4:349–358. [PubMed: 7313389]
2. Ancoli-Israel S, Kripke DF, Klauber MR, Mason WJ, Fell R, Kaplan O. Sleep disordered breathing in community-dwelling elderly. *Sleep* 1991;14(6):486–495. [PubMed: 1798880]
3. Young, T. Epidemiology as a research tool in breathing disorders of sleep. In: Saunders, NA.; Sullivan, CE., editors. *Sleep and breathing*. New York: Marcel Dekker, Inc.; 1994. p. 311–336.
4. Young T, Palta M, Dempsey J, Skatrud J, Weber S, Badr S. The occurrence of sleep disordered breathing among middle-aged adults. *New England Journal of Medicine* 1993;328:1230–1235. [PubMed: 8464434]
5. Young T. Sleep-disordered breathing in older adults: Is it a condition distinct from that of middle-aged adults? *Sleep* 1996;19:529–530. [PubMed: 8899930]
6. Young T, Shahar E, Nieto FJ, et al. Predictors of sleep-disordered breathing in community-dwelling adults: the Sleep Heart Health Study. *Archives of Internal Medicine* 2002;162:893–900. [PubMed: 11966340]
7. Launois SH, Pepin JL, Levy P. Sleep apnea in the elderly: A specific entity? . *Sleep Med Rev.* 2006in press
8. Ancoli-Israel S, Coy TV. Are breathing disturbances in elderly equivalent to sleep apnea syndrome? *Sleep* 1994;17:77–83. [PubMed: 8191206]
9. Gooneratne AD, Gehrman PR, Nkwuo JE, et al. Consequences of comorbid insomnia symptoms and sleep-related breathing disorder in elderly subjects. *Archives of Internal Medicine* 2006;166:1732–1738. [PubMed: 16983051]
10. Weaver TE, Chasens ER. Continuous Positive Airway Pressure Treatment for Sleep Apnea in Older Adults. *Sleep Med Rev.* 2006in press
11. Johns MW. Reliability and factor analysis of the Epworth Sleepiness Scale. *Sleep* 1992;15:376–381. [PubMed: 1519015]
12. Martin JL, Ancoli-Israel S. Napping in Older Adults. *Sleep Medicine Clinics* 2006;1:177–186.