Deceased Renal Function and the Prevalence of Obstructive Sleep Apnea

More Data Are Needed

To the Editor:

I have read the study by Nicholl et al1 published in CHEST (June 2012) with a particular interest. The researchers have analyzed the home sleep monitoring data of 254 individuals with some degree of renal dysfunction (75 on hemodialysis). They have concluded that a decreased kidney function is associated with greater prevalence of obstructive sleep apnea (OSA) and nocturnal hypoxia. It is well known that kidney disease (as well as heart failure and resistant arterial hypertension) is related to volume overload, and in the supine position this extra fluid can shift toward the neck, causing increased upper airway resistance and collapsibility.2 However, this is only one potential explanation, with alternatives being possible.

Some study aspects merit a brief discussion. First, the patients with chronic kidney disease and end-stage renal disease were older, had a greater BMI, and had a greater prevalence of congestive heart failure (CHF), cerebrovascular disease, and COPD. Age and increased BMI are known risk factors of OSA, and greater prevalence of OSA in patients with worse renal function can be attributed to these variables, at least to some extent. Cerebrovascular disease and CHF can be considered as risk factors for OSA, and CHF is likely to act via the same fluid overload pathway.3,4 Thus, the greater prevalence of OSA can be a pure reflection of a greater age and multiple comorbidities but not because of the impact of renal disease.

It is also relevant to note that the home sleep monitoring used cannot reliably distinguish between OSA and central sleep apnea, which have different pathophysiologic pathways.3 An association between decreased renal function and nocturnal hypoxia can be partially explained by a higher prevalence of COPD in patients with chronic kidney disease and end-stage renal disease. Based on the aforementioned factors, longitudinal studies are needed to give the answer as to whether declining renal function is an independent risk factor for OSA.

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REFERENCES