Renal Denervation for Sleep Apnea and Resistant Hypertension: Alternative or Complementary to Effective Continuous Positive Airway Pressure Treatment?

To the Editor:
We read with interest the well-written article by Witkowski et al1 evaluating the effect of renal denervation in sleep apnea (SA) patients with resistant hypertension. They concluded that renal denervation should be seen as an emerging therapeutic option in these patients, because they noticed a significant reduction in clinic blood pressure (BP) levels and SA severity.

The 2 morbidly obese patients of the cohort (ie, No. 1 and No. 3) were treated previously with continuous positive airway pressure (CPAP), although not for a long period of time (ie, for a few months). Although these 2 patients experienced severe obstructive SA, the effect of CPAP on clinic BP, in contrast with a few months). Although these 2 patients experienced severe pressure (CPAP), although not for a long period of time (ie, for 3) were treated previously with continuous positive airway pressure (CPAP), although not for a long period of time (ie, for extremely denervation should be seen as an emerging therapeutic option in these patients, because they noticed a significant reduction in clinic blood pressure (BP) levels and SA severity.

The 2 morbidly obese patients of the cohort (ie, No. 1 and No. 3) were treated previously with continuous positive airway pressure (CPAP), although not for a long period of time (ie, for a few months). Although these 2 patients experienced severe obstructive SA, the effect of CPAP on clinic BP, in contrast with previous evidence,2,3 was minimal. Because these 2 patients were already treated with the etiologic therapy for SA, it would be interesting to know the extent of apnea hypopnea index decline before the ablating procedure to evaluate the potential magnitude of apnea hypopnea index reduction of CPAP alone as compared with both CPAP and renal denervation. Moreover, we noticed that patient No. 3 presented a very increased apnea hypopnea index (ie, 64.1 per hour) after 6 months, despite CPAP application and renal denervation, suggesting that CPAP treatment was not effective. In another 2 patients (ie, No. 2 and No. 6), the effect of renal denervation on SA severity was the inverse of that expected. How do authors explain the controversy? Patient No. 9 was treated with spironolactone, which may improve SA by reducing upper airway edema during sleep. Based on these considerations, we suggest that the effect of renal denervation on SA severity in patients under CPAP should be reassessed to distinguish it from the effectiveness of CPAP alone.

Another hidden issue is linked to the timing of drug administration. Were all of the medications administered in the morning or was medication delivery split into different daytime periods? Furthermore, we wondered whether clinic BP measurements were performed before or after drug delivery. According to the 6-month clinic BP measurements, only 3 patients achieved BP levels <140/90 mm Hg. This unsatisfactory rate of BP control might probably be even worse in terms of ambulatory measurements. In the accompanying editorial by Egan,4 further concern is raised regarding the preferential effect of renal denervation on clinic compared with ambulatory BP levels, suggesting that renal denervation may attenuate the potential white-coat phenomenon; at the same time this finding questions its impact on the overall hemodynamic load in resistant hypertension.

Over and above these concerns, the study by Witkowski et al1 provides novel insights in that difficult-to-treat group of patients with resistant hypertension and SA. However, attenuation of fluid retention by renal denervation in obese subjects with SA could be successfully accomplished by more simple therapeutic options, like lifestyle interventions. No lifestyle interventions were implemented, because body size remained almost the same after 6 months. We believe that lifestyle interventions should have a foremost place in the treatment of these patients and bariatric surgery should constitute another option, mostly neglected in the usual clinical practice.3

Disclosures

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