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Reply to Jin et al.

From the Authors:

We thank Jin and colleagues for their interest in our randomized crossover trial showing the dominant role of intermittent hypoxia in elevating morning blood pressure in obstructive sleep apnea (OSA) during continuous positive airway pressure withdrawal (1). Jin and colleagues usefully reiterate several important points discussed in our original article. We agree that increased PaCO₂ due to high-concentration, long-term oxygen therapy should be cautiously monitored, and that some patients, particularly those with more severe OSA, may not tolerate such supplemental oxygen therapy.

We found no significant difference in overnight urinary normetadrenaline and metadrenaline (both biomarkers of sympathetic activation) between oxygen and air treatment during continuous positive airway pressure withdrawal (2). We agree with Jin and colleagues's suggestion that this negative finding (in a secondary outcome) does not exclude a role for sympathetic activity in intermittent hypoxia-related blood pressure rises in OSA. Our study was not powered for these secondary outcomes, and overnight urinary normetadrenaline levels tended to be lower, albeit not significantly, after supplemental oxygen treatment compared with air. Certainly data from others would suggest the

importance of sympathetic activation in both animal (2) and human (3) intermittent hypoxia models.

Much more work is needed before any recommendations can be made about any therapeutic use of supplemental oxygen in OSA, including larger multicenter trials to assess the long-term efficacy and safety of supplemental oxygen in treating OSA-associated resistant hypertension. ■

Author disclosures are available with the text of this letter at www.atsjournals.org.

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Expiratory Flow Limitation and Airway Closure in Patients with Acute Respiratory Distress Syndrome

To the Editor:

I read with great interest the research letter by Chen and colleagues published in the January 2018 issue of the *Journal* on airway closure in acute respiratory distress syndrome (ARDS) (1).

In this study, the authors found that 8 of 30 patients with ARDS who were mechanically ventilated at low positive end-expiratory pressure (PEEP) exhibited airway closure, as estimated by the shape of the pressure–volume (P–V) curve. The inflation P–V curve pattern consistent with airway reopening was nonlinear, characterized by the presence of an initial segment with an extremely low slope, which turns abruptly to a second segment with much higher slope, a pattern implying that the airways were totally closed until a sufficiently high airway opening pressure was reached (2).

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