

## ASSOCIATION BETWEEN OBSTRUCTIVE SLEEP APNEA AND DELIRIUM AND ATRIAL FIBRILLATION AFTER CARDIAC SURGERY

Eitan Scher, MD<sup>1</sup>., Eva Rivas, MD<sup>1,2</sup>., Mauro Bravo, MD<sup>1</sup>., Karan Shah, MS<sup>3</sup>, Jorge Araujo-Duran, MD<sup>1</sup>., Anne Cipriani, BA<sup>1</sup>, Kiran Winemiller, BA<sup>1</sup>, Alparslan Turan, MD<sup>1</sup>.

1. Department of Outcomes Research, Cleveland Clinic, Cleveland, OH, USA.
2. Department of Anesthesiology, Hospital Clinic de Barcelona, Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), University of Barcelona, Barcelona, Spain.
3. Department of Quantitative Health Sciences, Cleveland Clinic, Cleveland, OH, USA.

### Background

Postoperative delirium and Atrial Fibrillation (AF) are two common complications after cardiac surgery. Obstructive sleep apnea (OSA) has a high incidence on patients who undergo cardiac surgery and it seems to be associated with higher incidence of postoperative delirium and AF. However, previous studies are scarce and with controversial results. We aimed to test the hypothesis that adult patients with OSA have higher incidence of postoperative delirium and AF than patients without OSA after cardiac surgery.

### Methods

This is a sub-analysis of a multicenter randomized, double-blind placebo controlled clinical trial, the Ancillary Effects of Dexmedetomidine Sedation After Cardiac Surgery (DECADE) trial (NCT00981474) from January 2012 through November 2018. OSA was defined as a stop bang questionnaire score  $\geq 5$  during the preoperative assessment visit, or a preoperative diagnosis of OSA. The primary outcome was AF from the time of ICU admission until hospital discharge or five days. The secondary outcome was delirium, assessed with the Confusion Assessment Method for the ICU through the initials 5 postoperative days. After assessing balance, a weighted logistic regression model was used to estimate the odds ratio (OR) and the associated 95% CI for the primary and secondary outcomes.

### Results

547 patients were included in the analysis. Of these, 126 were diagnosed with OSA. The incidence of AF was 38% (n=49) in the patients who suffered from OSA and 33% (n=141) in the non-OSA patients. We did not find an association between OSA and atrial fibrillation, with estimated OR of 1.02 (0.59-1.77),  $P=0.930$ . The incidence of delirium was 16% (n=20) in the patients who suffered from OSA and 14% (n=60) in the non-OSA patients. OSA was not found to be associated with delirium, with an estimated OR of 0.78 (0.41-1.45),  $P=0.460$ .

### Conclusion

We did not find an association between OSA and either atrial fibrillation or delirium after thorough adjustment for confounding.