

## INTRODUCTION

- Atrial fibrillation (AF) is the most common sustained arrhythmia leading to cardiovascular morbidity and mortality.
- As the incidence of AF continues to rise, it is imperative to identify and treat potentially modifiable risk factors for the disease.
- Obstructive sleep apnea (OSA) and sleep disordered breathing (SDB), are emerging disorders that appear to be important and rather treatable risks factor for AF. Nevertheless, conflicting evidence exists in the literature regarding OSA/SDB as an underlying cause of AF.
- Therefore, we conducted a meta-analysis of all available studies to characterize the relationship between OSA-SDB and AF.

## METHODS

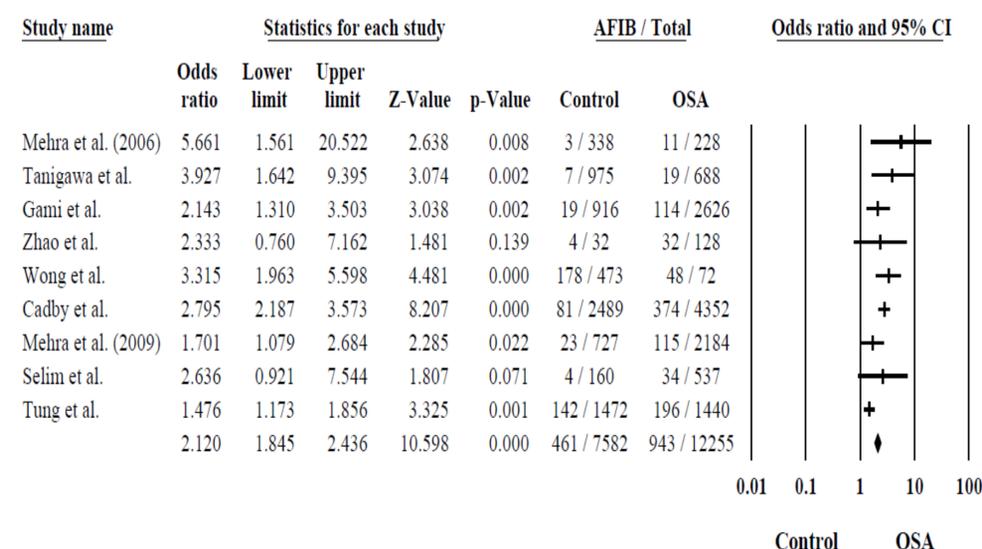
- Databases including PUBMED, Medline, and Cochrane Library were searched for relevant studies using the keywords “atrial fibrillation”, “obstructive sleep apnea” and “sleep disordered breathing.”
- OSA was categorized by an Apnea-Hypopnea Index (AHI) >5, a Respiratory Distress Index (RDI) >30 or a 3% Oxygen desaturation Index (ODI) >15.
- Within these subjects, the occurrence of AF versus no AF was then compared.
- The pooled data was analyzed using Comprehensive Meta-Analysis package V3 (Biostat, USA). The Mantel-Haenszel method (Mantel & Haenszel, 1959) was used for calculating the weighted pooled odds ratio under the fixed effects model.

## RESULTS

- A total of 579 results were generated, of those a total of 9 qualified studies were included in this meta-analysis for the random pooled effects model (n=19,837).
- Sample sizes ranged from n=160 patients to n=6841 patients.
- The risk of AF was found to be higher among OSA versus control group (OR; 2.120, C.I: 1.845- 2.436, Z; 10.598 p; < 0.001).
- The heterogeneity observed for the pooled analysis was Q-value; 22.487 df (Q); 8 P-value; 0.004, I-squared; 64.424 Tau<sup>2</sup>; 0.098, suggesting appropriate study selection and moderate heterogeneity

## FORREST PLOT

**Atrial Fibrillation (AFIB) and Obstructive Sleep Apnea (OSA); Meta Analysis**



## DISCUSSION

- We found that OSA/SDB is strongly associated with atrial fibrillation as demonstrated by our meta-analysis.
- To our knowledge, this is the only study to incorporate all currently available studies into one meta-analysis in an effort to characterize the relationship between obstructive sleep apnea and atrial fibrillation.
- Our study confirms and further strengthens the notion that OSA/SDB populations are at high risk for development of AF, a disease with increased cardiovascular morbidity and mortality.

## REFERENCES

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