



**COMORBIDITIES ASSOCIATED WITH ATRIAL FIBRILLATION: AN OVERVIEW
OF PATIENTS WITH A HISTORY OF STROKE AND SLEEP APNEA**

**Karen Cardenas Lara, Ariana Bernuy (LEAP HS Program, CARMA Center, Nassir
Marrouche, MD, Gagan Kaur, BS, Andy Rivera, BS, and Benjamin Hardisty, PhD.
Department of Cardiology**

Purpose

To identify the prevalence of comorbidities in patients with atrial fibrillation and an existing history of obstructive sleep apnea and stroke.

Background

Atrial Fibrillation (AFib) is the most common heart arrhythmia, affecting between 2.7-6.1 million people in the U.S. Afib occurs when the upper chambers of the heart (atria) beat irregularly, reducing blood flow to the lower chambers (ventricles). About 15% to 20% of ischemic strokes are caused by AFib. Throughout the study the most common comorbidities observed with AFib are obesity, hypertension and diabetes. Throughout our patient population obesity was found in 25% of patients. It is also implicated as a risk factor for progression from paroxysmal to permanent Afib. Patients with type 2 diabetes are at a 35% to 60% greater risk for developing AFib. The last comorbidity seen throughout the patient population was obstructive sleep apnea also known as OSA. Obstructive sleep apnea is prevalent in approximately half of all AFib patients. Use continuous positive airway pressure (CPAP) devices in treating OSA has been documented as reducing the risk of AFib episodes to nearly half.

Methodology

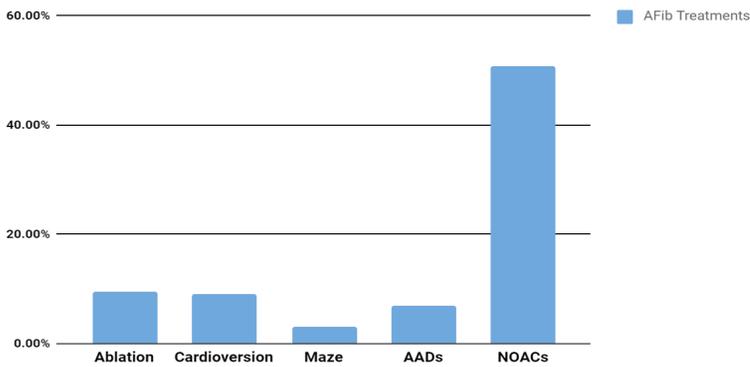
Utilizing the Comprehensive Arrhythmia Research & Management Center Atrial Fibrillation Database, records were searched to identify patients who have a documented diagnosis of atrial fibrillation, stroke, and sleep apnea. Also, a medical history which includes taking at least one cardiac medication (current or historical). A total of 4,639 patients were identified as satisfying the initial criteria. Once all duplicates or invalid records were removed, a total of 199 patient charts underwent an in-depth chart review. Descriptive statistics were used to describe the prevalence of comorbidities, utilization of cardiac medications, type of stroke, and atrial fibrillation treatment history.

Results

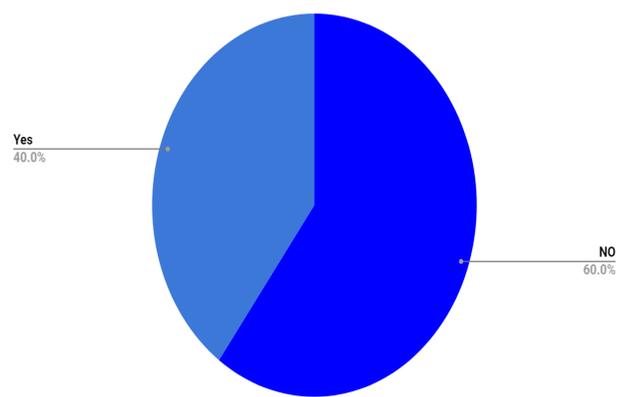
Initially there was 4,639 patients, however only 199 patients met the inclusion criteria. In the study there were 71 female and 128 male patients, regardless it is demonstrated that

these issues are more prevalent in the male population. Age wise 69 ± 14.1 were female and 71.2 ± 11.5 were male. However, for our deceased population 28.2% were females and 29% were males. For AFib treatment we see five common treatments Ablation, Cardioversion, Maze, AADs (antiarrhythmic), and NOACs (anticoagulants) the highest treatment used within the population is NOACs which was being used by 50.8% of the population. We also see three common comorbidities Coronary Artery disease (44.3%), Hypertension (75.4%), and Diabetes (46.2%). the usage of CPAP or BIPAP for OSA.

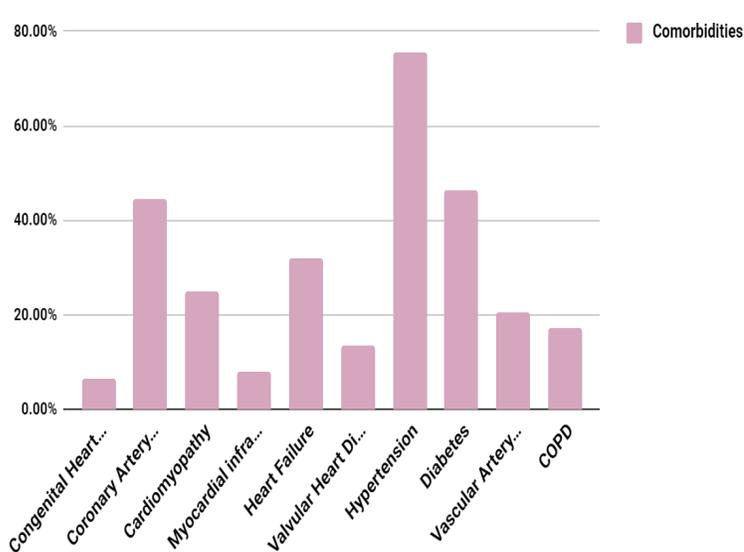
AFib Treatment History



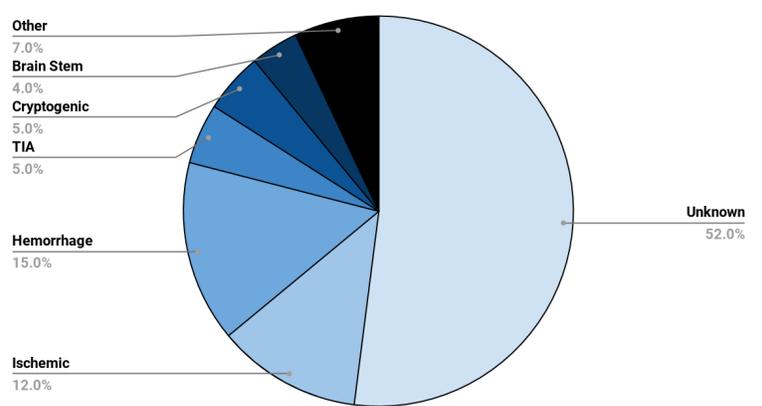
Use of CPAP or BiPAP for OSA



Cardiac Comorbidities



Types of Strokes



Implications

One of the factors that limited other possible outcomes was the lack of diversity, this study consisted mainly of a predominantly white male population. Inclusion of all diverse populations are crucial to better understand how these issues affects humanity as a whole rather than focusing on one specific population. Another contributor was the age limitation requirement of all patients which consisted of 55 years and older, this narrowed the quantity of the study. Throughout patient's medical history there were some participants who fit almost all of the inclusion criteria requirements except they were underaged therefore, unable to partake in the study. By expanding populations in the study regardless of age, race or gender would allow a positive comprehensive approach to the issue and potentially result in a successful qualitative outcome.

Conclusions

Older males were almost twice as likely to have a history of atrial fibrillation, stroke, and OSA. However, most patients were less likely to use a CPAP or BiPAP for management of their obstructive sleep apnea. Also half of all patients were on some form of novel oral anticoagulant as part of their AFib treatment. The most prominent cardiac comorbidities were coronary artery disease, diabetes, and hypertension which were all present in nearly half of the sample population. It is also crucial to be aware of the correlation that hypertension, diabetes and coronary artery disease share and by potentially treating one could eventually lead to the impediment of the other from progressing.

Citations:

1. Atrial Fibrillation: Risks, Comorbidities, and Differential Diagnoses. (n.d.). Retrieved from <https://www.thecardiologyadvisor.com/slideshow/arrhythmia/atrial-fibrillation-risks-comorbidities-and-differential-diagnoses/>
2. Wang, T. J. (2004, November 24). Obesity and the Risk of New-Onset Atrial Fibrillation.
3. Management of atrial fibrillation in diabetes. (n.d.). Retrieved from <https://www.practicaldiabetes.com/article/management-atrial-fibrillation-diabetes/>
4. Gleeson, J. R. (n.d.). Sleep Apnea and Atrial Fibrillation: How They're Connected.
5. Marulanda-Londoño, E., & Chaturvedi, S. (2017, December 11). The Interplay between Obstructive Sleep Apnea and Atrial Fibrillation.