

## **Representation and Outcome of Catheter Ablation for Treatment of Atrial Fibrillation Among Patients with Obesity: A Systematic Review of Randomized Controlled Studies**

Eh Khaing, Danielle Dircks, BS, Ahmad Aroudaky, MD, Muaaz Almerstani, MD, James Aguto, BS HCB HLA, Jmaylia Mimms, CMA, William Schleifer, MD, Jason Payne, MD, Arthur Easley, MD, Faris Khan, MD, MS, John Windle, MD, Shane Tsai, MD, MBA, Daniel Anderson, MD, PhD, Gleb Haynatzki, PhD, DSc, Niyada Naksuk, MD

**Background:** Obesity and atrial fibrillation (AF) coexist. However, the accurate prevalence and the impact of obesity on outcomes of AF ablation have not been well studied. We aimed to examine the proportion of obese participants enrolled in contemporary randomized controlled trials (RCTs) of AF ablation and outcomes of ablation when subgroup analysis of participants with obesity were available.

**Methods:** We systematically searched PubMed/MEDLINE for RCTs examining management of AF mainly endocardial catheter ablation published between 01/01/2015 to 05/31/2022. When data regarding body mass index (BMI) were available, normal distribution was assumed and a z-score was used to estimate the proportion of obese participants defined as body mass index (BMI) >30 kg/m<sup>2</sup> (or >25 kg/m<sup>2</sup> when trials were conducted in Asia).

**Results:** Of 116 eligible RCTs with 25,219 participants, 112 (96.6%) RCTs did not report the proportion of obese participants and 2 trials investigating cryoballoon ablation excluded patients with BMI >35 kg/m<sup>2</sup>. Published information regarding BMI was available in 75 (64.7%) RCTs. Using reported BMI data, we estimated the proportion of obese participants varied greatly across these trials, ranging from 5.8%-71.9% (mean 38.7% ± 14.4% and median 38.6% with IQR 28.8%, 50.0%). Obese patients were represented in a greater proportion among trials conducted in North America (49.8%) and Asia (45.0%), compared to Europe (32.0%), P < 0.001. Subgroup or analysis adjusting for BMI was reported in only 11 (9.5%) RCTs; 4 (36.4%) of these suggested that BMI or body weight affected the main findings, Table.

**Conclusion:** Most AF ablation RCTs underreported the proportion of obese participants and its impact on the main outcomes. Using available BMI information, we estimated ~ 39% of AF patients had concomitant obesity. Furthermore, BMI/ body weight affected the main outcomes among ~36% of these AF RCTs. These findings suggest that obesity is a very common comorbidity among AF patients and may affect outcomes following catheter ablation. However, enrollment of obese participants and its impact on results in AF RCTs are underreported.

Table: Can you add the Table 4 from your poster?