**INTRODUCTION**

- During pulmonary vein (PV) isolation, PV stenosis is an important potential complication with thermal ablation modalities such as radiofrequency ablation (RFA).
- **Pulsed field ablation (PFA)** is an alternative energy source that causes non-thermal cell death of the target tissue; since heating of connective tissue components does not occur, this modality may reduce the risk of PV narrowing/stenosis.
- We compared the impact of **PFA vs RFA** on the incidence and severity of PV narrowing / stenosis.

**METHODS**

- After appropriate IRB approval, data were analyzed from 4 clinical trials employing either PFA (IMPULSE & PEFCAT) or RFA (TOCCASTAR & HEARTLIGHT Pivotal) [only the RF arm of this last trial was included]. CT imaging was required at baseline and at 3 months follow-up.
- The CT scan datasets were reconstructed into 3-dimensional images, and the long and short axes of each PV ostium were measured in a randomized, blinded manner by 2 physicians.

- PV narrowing, defined as a dimensional reduction in the long or short axis, was quantitatively classified as **mild** (30-50%), **moderate** (50-70%), or **severe** (>70%).
- Any cases of narrowing were then qualitatively further classified as having either a i) waist-like tapering consistent with ablation-related damage, or ii) without any tapering potentially attributable to factors such as atrial remodeling, volume changes or shifted extracardiac anatomy between the two scan timepoints.

**RESULTS**

- The frequency of pulmonary vein narrowing / stenosis is significantly reduced with PFA compared to RFA. This may reflect fundamental mechanistic differences in either / both ablation and healing between PFA vs RFA.

**CONCLUSIONS**

This study suggests the incidence and severity of PV narrowing / stenosis is significantly reduced with PFA compared to RFA. This may reflect fundamental mechanistic differences in either / both ablation and healing between PFA vs RFA.

**Disclosures**