

# The role of posterior wall isolation in persistent atrial fibrillation and systolic heart failure: a CAPLA substudy

J William<sup>1,2,3\*</sup>, D Chieng<sup>1,3,4\*</sup>, H Sugumar<sup>1,3,4</sup>, LH Ling<sup>1,3,4</sup>, L Segan<sup>1,3,4</sup>, R Crowley<sup>1</sup>, A Al-Kaisey<sup>4,5</sup>, J Hawson<sup>4,5</sup>, S Prabhu<sup>1,3,4</sup>, A Voskoboinik<sup>1,2,3,4</sup>, G Wong<sup>4,5</sup>, JB Morton<sup>4,5</sup>, G Lee<sup>4,5</sup>, AJ McLellan<sup>4,5</sup>, M Wong<sup>5</sup>, RK Pathak<sup>6</sup>, L Sterns<sup>7</sup>, M Ginks<sup>8</sup>, CM Reid<sup>9</sup>, P Sanders<sup>10</sup>, JM Kalman<sup>2,4,5</sup>, PM Kistler<sup>1,2,3,4</sup>

<sup>1</sup>Cabrini Health, Melbourne; <sup>2</sup> Monash University, Melbourne; <sup>3</sup> The Baker Heart and Diabetes Research Institute, Melbourne; <sup>4</sup> University of Melbourne, Melbourne; <sup>5</sup> Royal Melbourne Hospital, Melbourne; <sup>6</sup> Canberra Hospital, ACT; <sup>7</sup> Royal Jubilee Hospital, Vancouver Island, British Columbia, Canada; <sup>8</sup> John Radcliffe Hospital, Oxford, UK; <sup>9</sup> Curtin University, Perth; <sup>10</sup> Royal Adelaide Hospital, Adelaide.

## Background

Catheter ablation in AF and heart failure with reduced ejection fraction (HFrEF) is associated with improved left ventricular ejection fraction (LVEF) and survival compared with medical therapy. Previous non-randomized studies have shown high success rates with adjunctive ablation beyond pulmonary vein isolation (PVI), including posterior wall isolation (PWI).

## Aim

To examine differences in outcomes between PVI alone versus PVI with PWI in patients with concomitant persistent AF (PsAF) and HFrEF

## Methods

CAPLA was a multi-centre, prospective, randomized trial involving PsAF patients assigned to PVI alone or PVI with PWI. This substudy included patients with HFrEF (LVEF < 50% on echocardiography).

The primary endpoint was freedom from any documented atrial arrhythmia of > 30 seconds, after a single ablation procedure, off anti-arrhythmic therapy (AAD) at 12mo.

## Results

The study cohort consisted of 98 patients with PsAF and HFrEF (mean age 62.1 ± 9.8 years, 79.5% males, median LVEF 35.5 ± 8%). 46.9% underwent PVI with PWI.

After 12 months, 58.7% with PVI and PWI were free from recurrent atrial arrhythmia off AAD vs 61.5% of patients with PVI alone (HR 1.02, 95% CI 0.54-1.91, p=0.96). (Figure 1) There were no significant differences in freedom from atrial arrhythmia on/off AAD after multiple procedures (PVI with PWI 60.9% vs PVI 65.4%; HR 1.12, 95% CI 0.58-2.16; p=0.73) or AF burden (median 0% in both groups, p=0.78) (Figure 2).

Median LVEF improved in PVI with PWI (19.3 ± 12.9%, p < 0.01), and PVI alone (ΔLVEF 18.2 ± 14%, p < 0.01), with no difference between groups (p=0.71) (Figure 3). Normalisation of LV function (≥ 50%) occurred in 71.4% in PVI with PWI compared with 59.1% with PVI alone (p=0.26).

Figure 1: Atrial arrhythmia recurrence

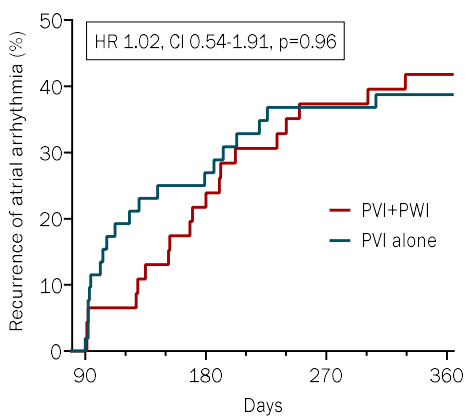


Figure 2: Median AF burden

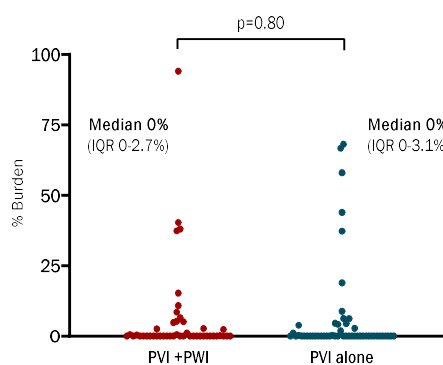
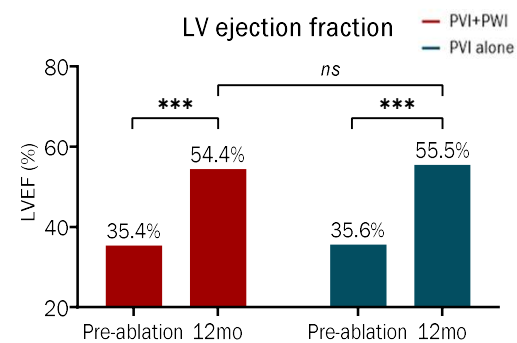


Figure 3: LV ejection fraction



## Conclusion

- Catheter ablation is associated with significant LVEF improvements in PsAF and HFrEF
- However adding PWI to PVI did not improve freedom from arrhythmia recurrence nor recovery of LVEF