

Does left atrial size predict ablation success in patients with persistent AF?

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BACKGROUND

- Left atrial (LA) enlargement is commonly used to guide patient selection for catheter ablation.
- However, its role as a predictor of outcomes in persistent AF ablation remains uncertain.

METHODS

- This study leveraged the **CAPLA database**, a high-quality research dataset of patients with persistent AF who had ablation performed at **Cabrini Health** and other sites
- 338 patients with persistent AF enrolled in the CAPLA trial were screened for pre-ablation LA volume index (LAVI) at transthoracic echo
- Atrial arrhythmia recurrence and burden was assessed at 1 year and 3 years post ablation using intensive rhythm monitoring
- We assessed the impact of LAVI on arrhythmia recurrence, AF burden (%) and AF recurrence phenotype



Cohort:

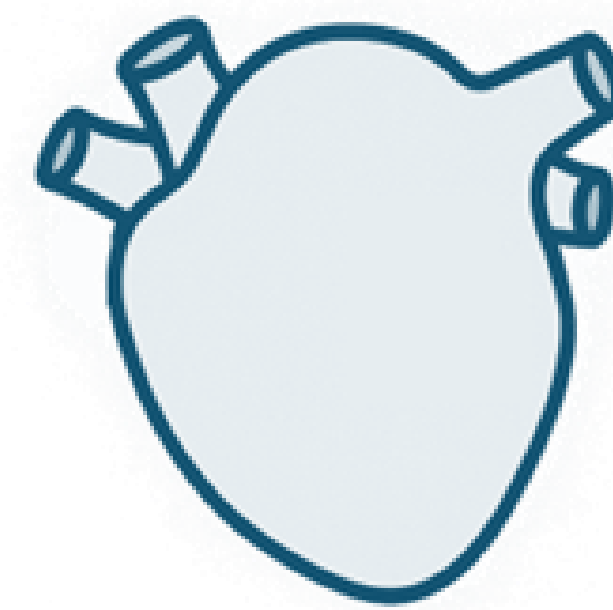
281 PsAF patients at index AF ablation with baseline LAVI



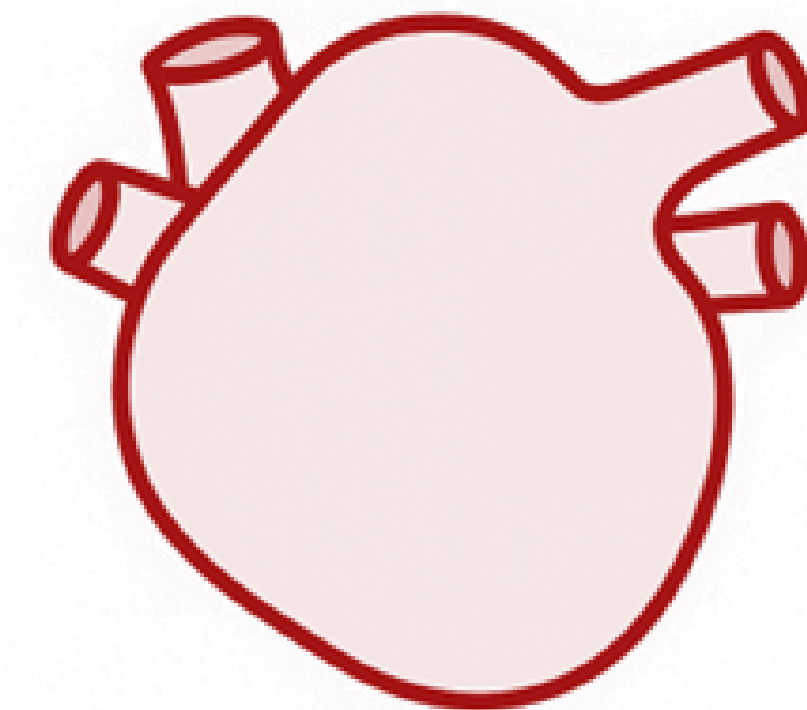
Outcomes

Arrhythmia recurrence & burden at 1y & 3y post-ablation

Normal left atrial size



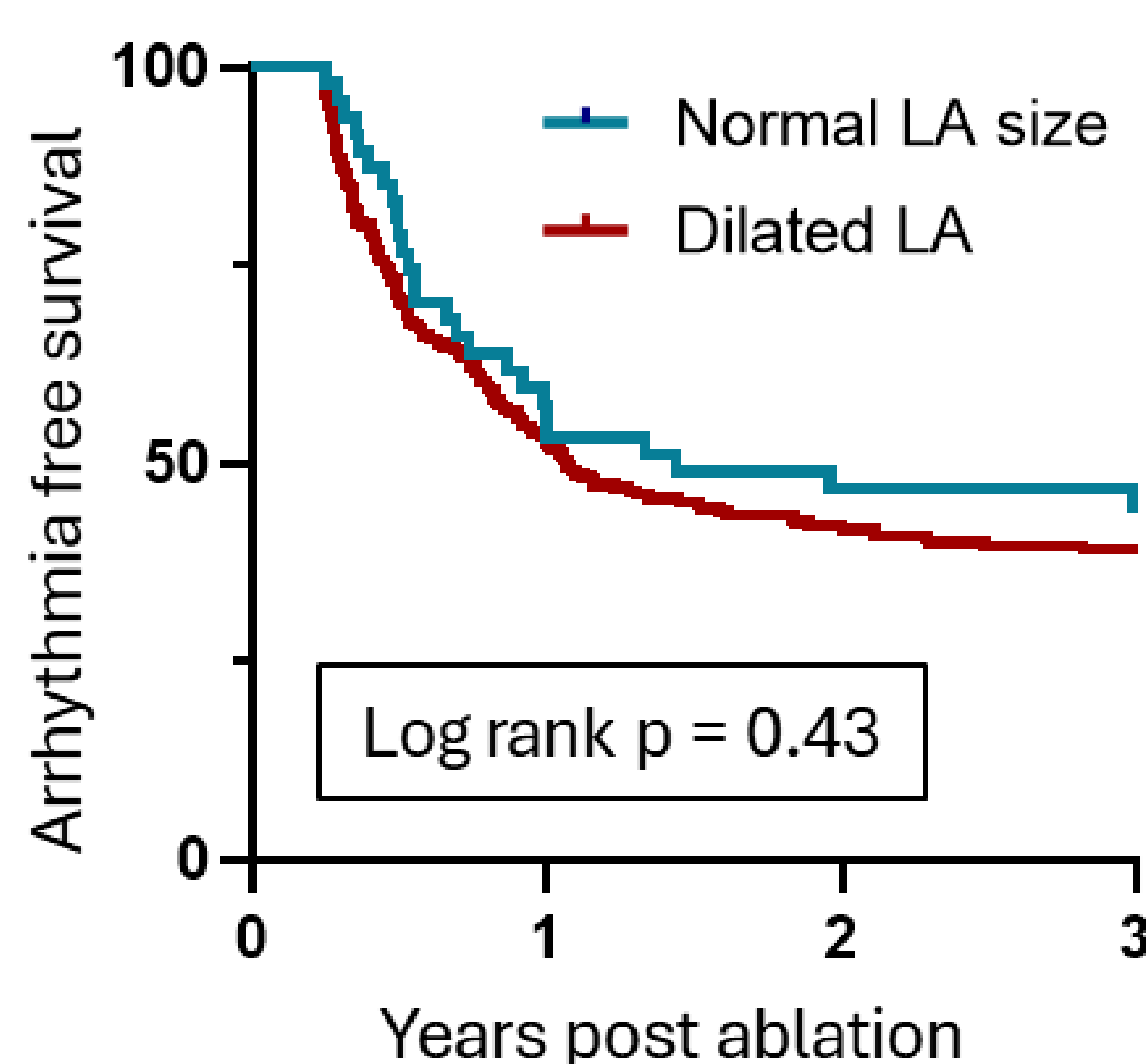
VS



Dilated left atrium

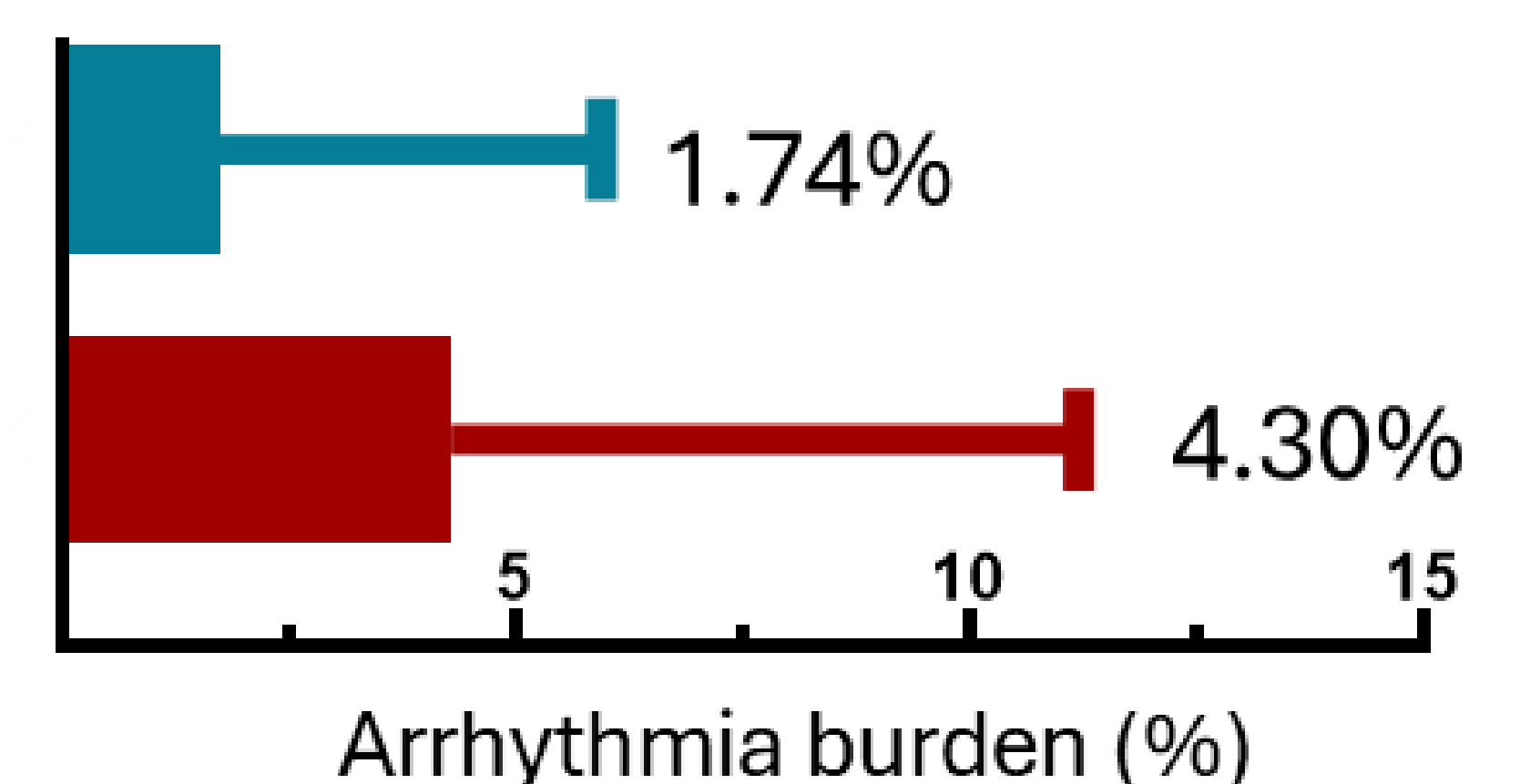
Arrhythmia Recurrence

No significant difference in dilated and non-dilated LA



Arrhythmia Burden

↑ LA size correlated with higher arrhythmia burden



Recurrence Phenotype

LA dilation linked to ↑ risk of persistent AF recurrence

RESULTS

Patient Cohort

- 281/338 (83%) patients in CAPLA had baseline LAVI data available.
- Mean age 64 ± 10 years; 78% male.
- Mean LAVI 47.9 ± 16.4 mL/m² (42% had severe dilation).

Arrhythmia Recurrence

- 46% had recurrent AF at 12 months, 62% at 3 years.
- LAVI not associated with binary recurrence in uni- or multivariable models.
- Kaplan–Meier: no difference across LAVI groups (p = 0.19).

Arrhythmia Burden

- AF burden increased with LA size at 1 year (p = 0.03) but not 3 years.
- LAVI modestly correlated with AF burden ($R^2 = 0.12$, p < 0.001).
- Higher LAVI predicted persistent rather than paroxysmal recurrence (OR 1.78 per 10 mL/m², p < 0.001).
- Also no difference in post-ablation **quality of life** between LA size strata

Conclusion: LA size does not predict whether or not patients have AF recurrence after persistent AF ablation. Even patients with severe LA enlargement derive substantial benefit from catheter ablation.