

Patterns of atrial fibrillation recurrence in patients undergoing catheter ablation for persistent AF: implications for healthcare utilisation and quality of life

R Crowley^{1,2}, D Chieng^{1,2}, L Segan^{1,2}, J William^{1,2}, J Morton³, G Lee³, P Sparks³, A McLellan³, H Sugumar^{1,2}, S Prabhu¹, L Ling¹, A Voskoboinik^{1,2}, R Pathak⁴, L Sterns⁵, M Ginks⁶, P Sanders⁷, P Kistler^{1,2}, J Kalman³
¹Alfred Health, Melbourne, Australia ²Cabrini Hospital, Melbourne, Australia ³Royal Melbourne Hospital, Melbourne, Australia ⁴Canberra Heart Rhythm, Canberra, Australia ⁵Royal Jubilee Hospital, Vancouver Island, Canada ⁶John Radcliffe Hospital, Oxford, United Kingdom ⁷Royal Adelaide Hospital, Adelaide, Australia

BACKGROUND

Catheter ablation of persistent atrial fibrillation (PsAF) has a lower success rate than ablation of paroxysmal AF (PAF). Limited data exist describing the nature of recurrence following ablation for PsAF and whether this is more commonly persistent or paroxysmal.

OBJECTIVES

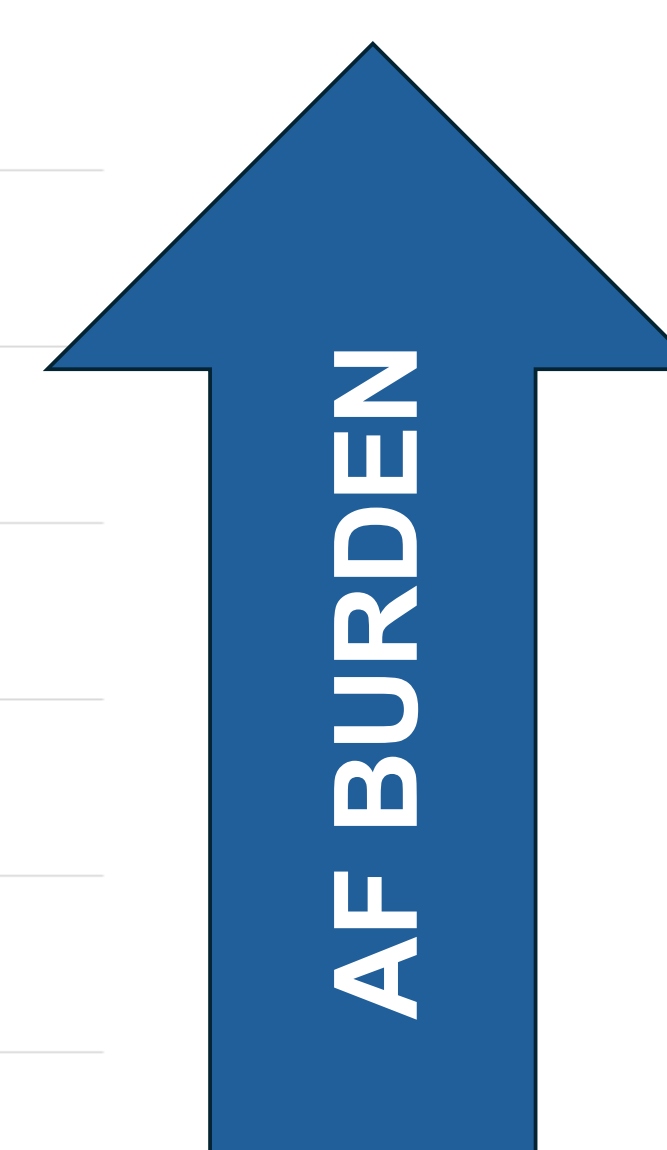
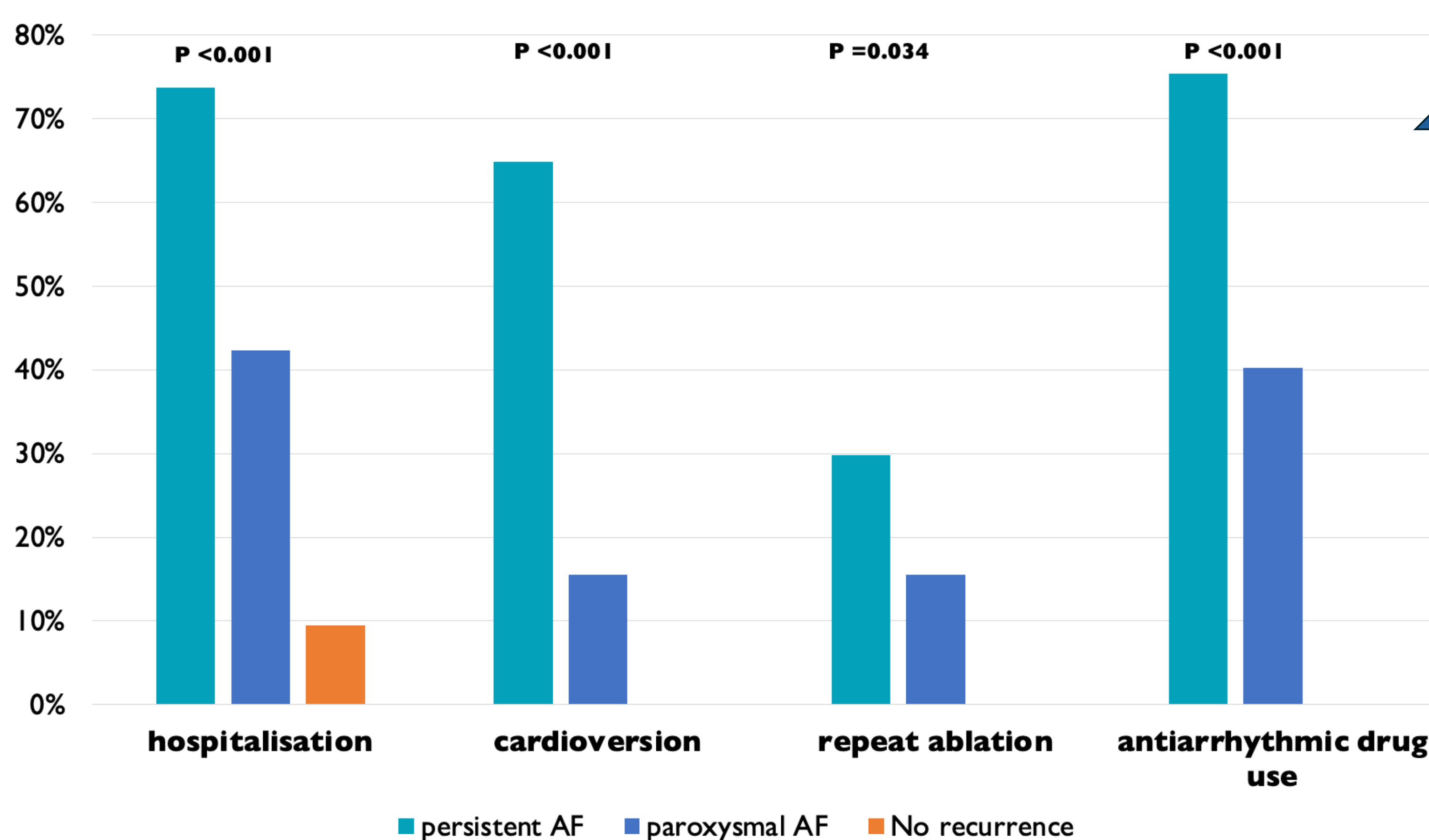
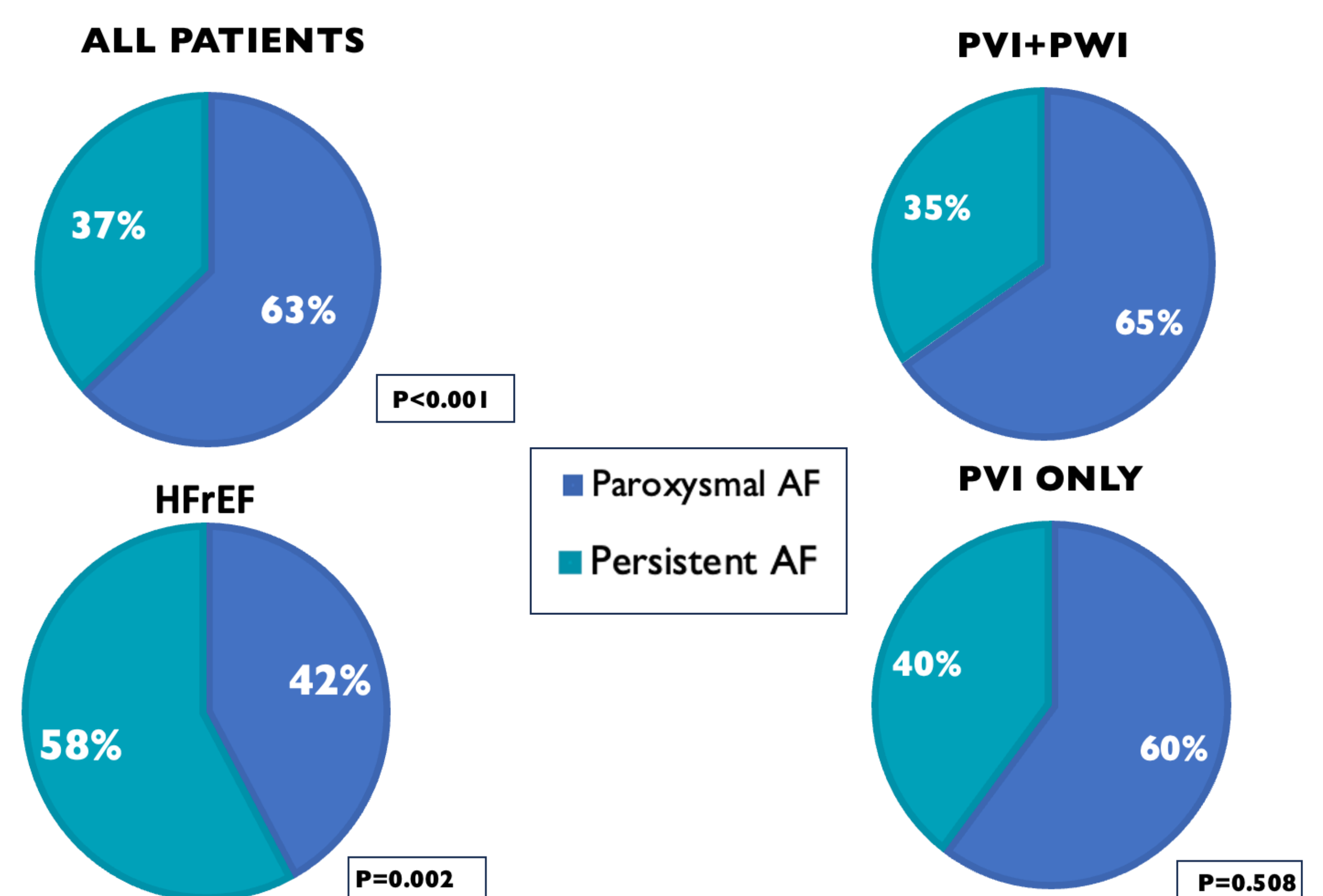
To describe the pattern of AF recurrence seen following catheter ablation for PsAF and the implications for health care utilisation and quality of life.

METHODS

This was a post-hoc analysis of the CAPLA trial, an international, multi-centre study that randomized patients with symptomatic PsAF to pulmonary vein isolation (PVI)+ posterior wall isolation or PVI alone. Patients underwent twice daily single lead ECG, implantable device monitoring or three monthly Holter monitoring.

RESULTS

154 of 333 (46.2%) patients (median age 67.3 years, 28% female) experienced AF recurrence at 12 months follow up. Recurrence was paroxysmal in 97 (63%) patients and persistent in 57 (37%). Median AF burden was 27.4% in PsAF recurrence and 0.9% in PAF recurrence ($p < 0.001$). Patients with PsAF recurrence had lower median baseline LVEF (PsAF 50% vs PAF 60%, $p < 0.001$) and larger baseline left atrial volume (PsAF $54.2 \text{ ml/m}^2 \pm 19.3$ vs PAF $44.8 \text{ ml/m}^2 \pm 11.6$, $p = 0.008$). On multivariate analysis lower LVEF (OR 1.068 for each 1% decrease in LVEF, 95% CI 1.011-1.127 $p = 0.018$) and increasing LA volume (OR 1.044 for each mL/m^2 increase in LAVI, 95% CI 1.005-1.084 $p = 0.026$) were associated with an increased likelihood of PsAF recurrence.



PsAF 27.4%
 PAF 0.9%
 $P < 0.001$

Health care utilisation was higher in PsAF (78.9%) compared to PAF recurrence (46.4%, $p < 0.001$) and lowest in those without recurrence (9.5%, $p < 0.001$).

Patients without AF recurrence had greater improvements in QoL as assessed by AFEQT ($\Delta 33.3 \pm 25.2$ points) compared to those with PAF ($\Delta 24.0 \pm 25.0$, $p = 0.012$) or PsAF ($\Delta 13.4 \pm 22.9$, $p < 0.001$) recurrence.

CONCLUSIONS

AF recurrence is more often paroxysmal after catheter ablation for PsAF irrespective of ablation strategy. Recurrent PsAF was associated with higher AF burden, increased healthcare utilisation and antiarrhythmic drug use. The type of AF recurrence and AF burden may be considered important endpoints in clinical trials investigating ablation of PsAF.