Persistent atrial fibrillation lasting over 4 years is associated with higher recurrence after catheter ablation

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**Introduction:** Longer atrial fibrillation (AF) durations have higher recurrence rates after rhythm control. However, symptom-based AF durations are not accurate, and there is limited data on the effect of the AF duration on recurrence after AF catheter ablation (AFCA). In the present study, we investigated the rhythm outcome of AFCA according to the AF duration based on the first electrocardiogram (ECG) diagnosis.

**Methods:** We included 1,005 patients with AF (75% male, 59±11 years old) who underwent AFCA and whose first ECG diagnosis time point was evident. The clinical characteristics and rhythm outcomes were compared based on the AF duration (≤24 months, n=409; 24–48 months, n=196; >48 months, n=400) and AF burden (paroxysmal AF [PAF], n=387; persistent AF [PeAF], n=618).

**Result:** Longer AF durations were associated with a higher number of patients with hypertension (p=0.005) or PeAF (p<0.001). During 24±22 months of follow-up, the post-ablation clinical recurrence rate was higher in patients with a longer AF duration (log-rank p=0.003). The AF recurrence rate was significantly higher in PeAF patients with an AF duration >48 months (log rank p=0.008), but not in subjects with PAF (log-rank p=0.573). In a multivariate Cox regression analysis, a longer AF duration was significantly associated with a higher clinical recurrence rate after AFCA in PeAF patients (adjusted HR 1.06, range 1.01–0.12, p=0.028), but not PAF.

**Conclusion:** Although longer AF durations were associated with higher clinical recurrence rates after AFCA, the rate was significant in patients with PeAF lasting >48 months, but not in PAF patients.