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**Title**

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# Onset of Atrial Fibrillation Recurrences in Patients Post Ablation



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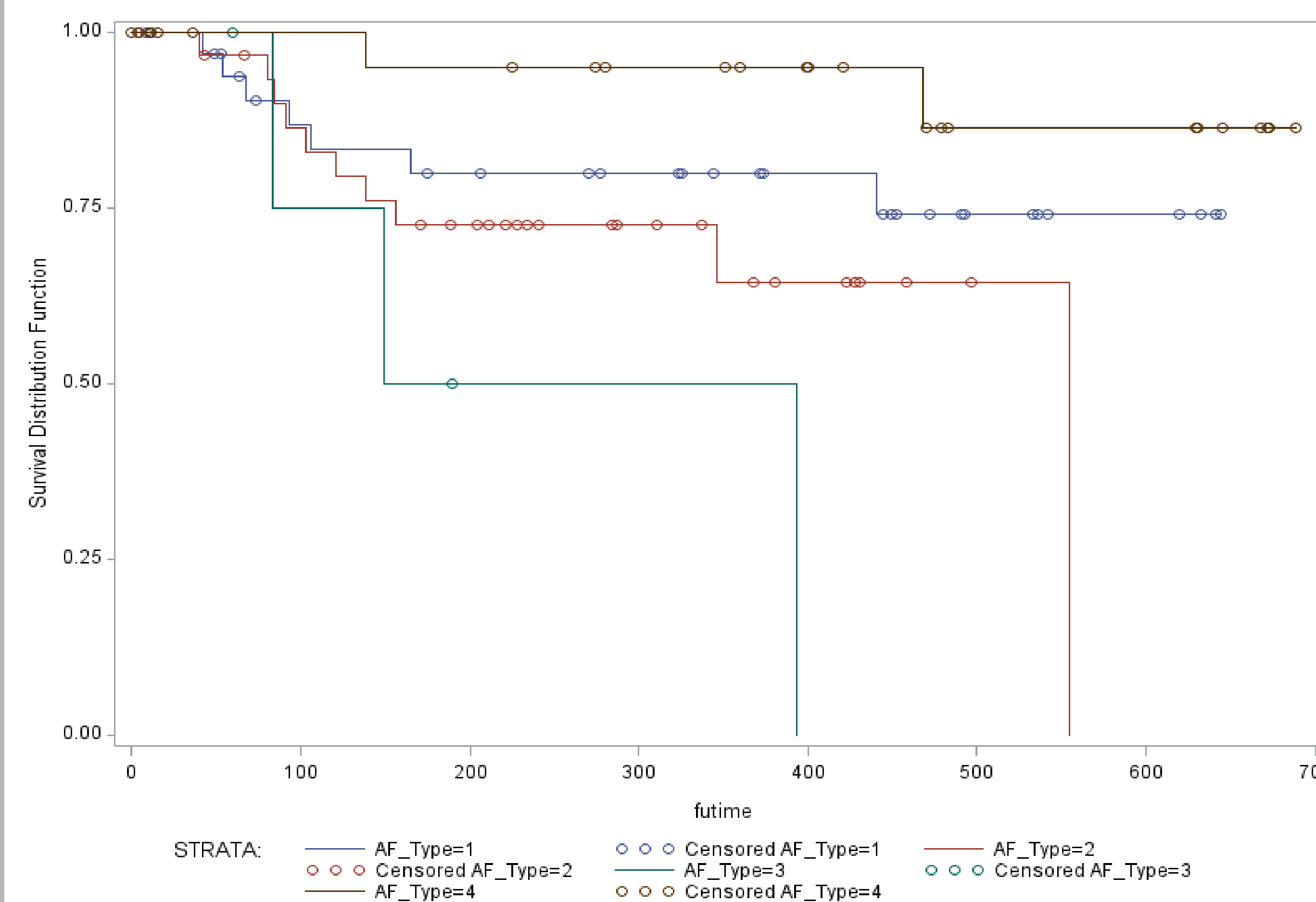
## Background

- There are still gaps in our knowledge regarding the pathogenesis, prevention as well as approaches to improve success in the management of atrial fibrillation (AF).
- Catheter ablation remains one of the preferred treatment options for paroxysmal, persistent, and long-standing AF.
- The goal of this prospective cohort study was to determine which type of AF is more likely to have recurrences post catheter ablation and when the recurrence is most likely to occur.

## Methods

- Consecutive consenting adult patients who underwent AF ablation therapy at UC Davis Medical Center from 1/1/2015 to 12/31/2021 were enrolled and electronic health data was analyzed.
- Recurrence-free survival was estimated by the Kaplan-Meier method.
- Two-sided P-value < 0.05 will be considered statistically significant.
- Statistical analyses were performed using SAS software.

## Kaplan-Meier Recurrence Free Survival Time



**Figure 1:** Follow up time on the x-axis is represented by days. The blue line represents, type 1 AF, paroxysmal AF. The red line represents, type 2 AF, persistent AF. The green line represents, type 3 AF, longstanding persistent AF. The brown line represents, type 4 AF control, other arrhythmias.

## Recurrence Rates of AF

Type of Arrhythmia	Single Event Occurrence	Reoccurrence of Arrhythmia
Paroxysmal AF	34 (35.0%)	7 (31.8%)
Persistent AF	31 (31.9%)	10 (45.4%)
Longstanding Persistent AF	5 (5.1%)	3 (13.6%)
Other Arrhythmias	25 (25.7%)	2 (9.0%)
Total	97	22

**Table 1.** The incidence of each type of AF and the rates of recurrence for each type.

## Results

- 97 patients with AF were identified.
- Recurrences of AF occurred in 22/97 (22.6%) cases.

### Mean Kaplan-Meier recurrence-free survival

- The longest recurrence free event was for paroxysmal AF, followed by persistent and long-standing persistent AF.
- However, unexpectedly, average time of recurrences (in days) for
  1. Paroxysmal AF = 371
  2. Persistent AF = 414
  3. Longstanding persistent AF = 255
  4. Other arrhythmias = 452

### Wilcoxon test

- $p = 0.0392$ , for persistent AF vs other arrhythmias
- $p = 0.0097$  for longstanding persistent AF vs other arrhythmias.

### Log Rank test

- $p = 0.0186$  and  $0.0044$  for persistent AF vs other arrhythmias and longstanding persistent AF vs other arrhythmias, respectively using Log Rank test.

## Conclusions

- The establishment of a recurrence timeframe can help to determine when recurrence is most likely to occur.
- This could possibly guide clinical practice and help clinicians determine when treatment for recurrence is necessary.