



# Preoperative Atrial Fibrillation and Perioperative Outcomes After Robotic-Assisted Pulmonary Segmentectomy

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## RESULTS

Table 1- Patient Characteristics in Patients with Atrial Fibrillation (Group 1) or Patients with No Atrial Fibrillation (Group 2) in Segmentectomies

|                        | Pre-Op Atrial Fibrillation (Group 1) (n=42) | No Pre-Op Atrial Fibrillation (Group 2) (n=223) | P (Group 1 vs Group 2) |
|------------------------|---------------------------------------------|-------------------------------------------------|------------------------|
| Age                    | 71.86±1.464                                 | 68.10±0.704                                     | 0.016                  |
| Race/Ethnicity         |                                             |                                                 | 0.128                  |
| White                  | 35 (15.4)                                   | 179 (78.9)                                      | -                      |
| Black                  | 3 (1.3)                                     | 4 (1.8)                                         | -                      |
| Hispanic               | 0                                           | 4(1.8)                                          | -                      |
| Asian                  | 0                                           | 0                                               | -                      |
| Other                  | 1 (0.4)                                     | 1 (0.5)                                         | -                      |
| BMI >30                | 27.8310±5.5                                 | 27.60626±0.17                                   | 0.561                  |
| Gender                 | -                                           | -                                               | 0.004                  |
| Male                   | 17 (40.5)                                   | 144 (64)                                        | -                      |
| Female                 | 25 (59.5)                                   | 81 (36)                                         | -                      |
| Smoker vs. Non-Smoker  | -                                           | -                                               | 0.071                  |
| Smoker                 | 35(87.5)                                    | 44 (24.4)                                       | -                      |
| Non-Smoker             | 5 (12.5)                                    | 136 (75.6)                                      | -                      |
| Path Size of Tumor     | 2.15 +- 0.19                                | 2.07 +- 0.14                                    | 0.225                  |
| Pre-Op Anticoagulation | 35(83.3)                                    | 85 (37.8)                                       | P<0.001                |
| Pre-Op COPD            | 16 (40)                                     | 47 (25.8)                                       | 0.056                  |
| Pre-Op CHF             | 2 (5.0)                                     | 5 (2.7)                                         | 0.369                  |
| Pre-Op HTN             | 23 (57.5)                                   | 91(50.3)                                        | 0.257                  |

Of 265 study patients, 42 (15.8%) had preoperative AF. Patients with preoperative AF had greater mean age (71.9 yr vs 68.1 yr; p<0.05), higher female proportion (59.5% vs 40.5%; p<0.05) and more anticoagulation use (83.3% vs 37.8%; p<0.001) compared to those without preoperative AF.

## INTRODUCTION

We investigated preoperative atrial fibrillation (AF) and surgical outcomes of patients who underwent robotic-assisted pulmonary segmentectomy (RAPS) for known or suspected non-small cell lung cancer (NSCLC) at an NCI-designated cancer center. We retrospectively analyzed patients who underwent RAPS from 2010 to 2023. Continuous variables are described as means with standard errors, while non-parametric numerical variables are described as medians with first and third quartile values. Categorical values are described as counts and proportions. The primary outcome was hospital length of stay (LOS). Tested secondary outcomes included postoperative complications, discharge disposition, and overall survival. Student’s t test, Wilcoxon rank-sum test, Chi square/Fisher's exact test, and Kaplan-Meier estimates were used, with significance at p≤0.05.

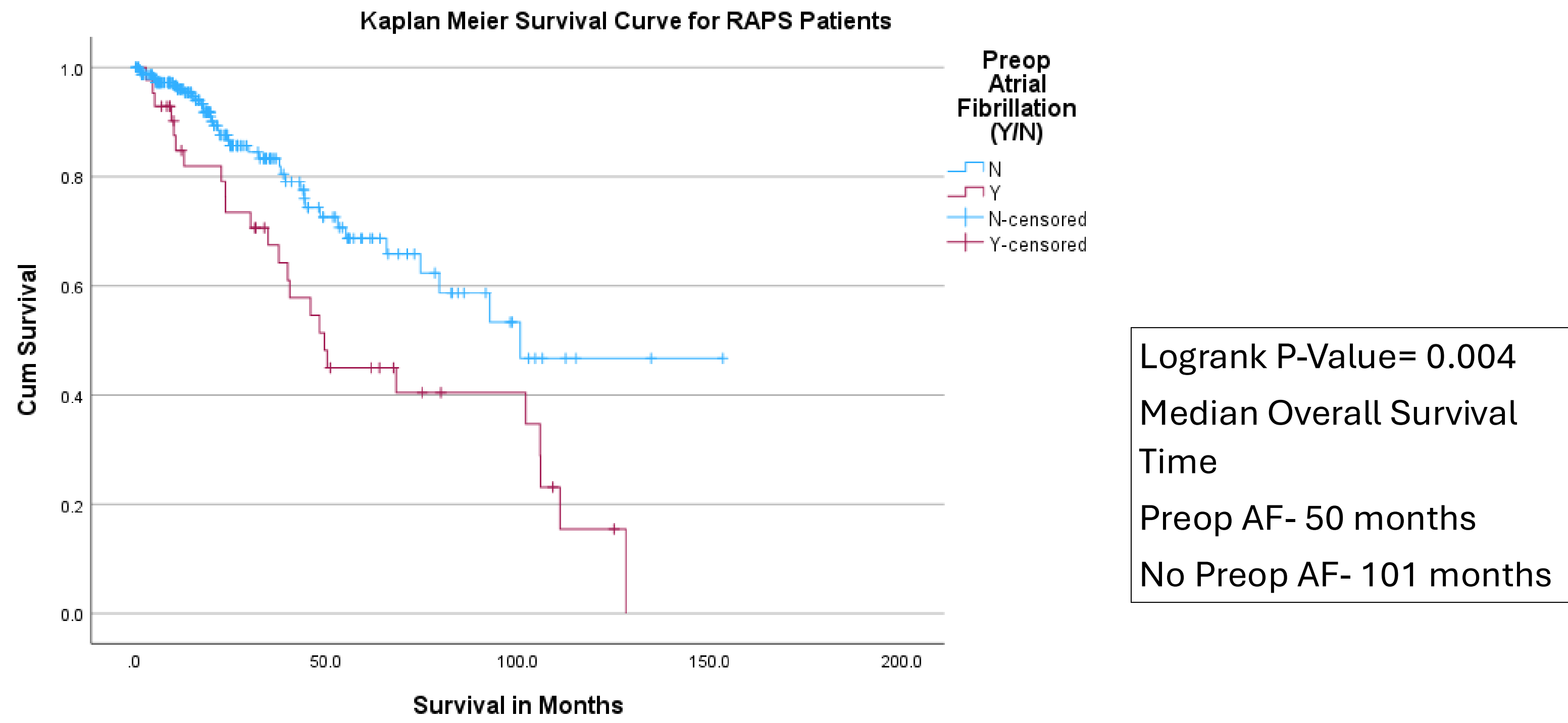


Figure 1: Kaplan-Meier Survival Curves after Robotic-Assisted Pulmonary Segmentectomy for Patients With (Red) or Without (Blue) Preop Atrial Fibrillation.

## CONCLUSION

We present demographic factors associated with and prognostic implications of preoperative AF on perioperative outcomes. Hospital LOS and discharge disposition did not differ between patients with and without preoperative AF. Further research is required to investigate true postoperative AF and its association with postoperative embolic phenomena, other perioperative outcomes, and recurrence-free and overall survival.

## RESULTS

Table 2- Comparison of Event Rates with Patients with and without Atrial Fibrillation at Discharge in Segmentectomies

|                                 | Pre-Op Atrial Fibrillation (Group 1) (n=42) | No Pre-Op Atrial Fibrillation (Group 2) (n=223) | P (Group 1 vs Group 2) |
|---------------------------------|---------------------------------------------|-------------------------------------------------|------------------------|
| Discharge Disposition           | -                                           | -                                               | 0.262                  |
| Home                            | 35(83.3)                                    | 203(90.3)                                       | -                      |
| HHN                             | 7(16.7)                                     | 20 (8.9)                                        | -                      |
| Dead                            | 0(0)                                        | 2(0.9)                                          | -                      |
| Post-Op DVT/PE                  | 0 (0)                                       | 7(2.6)                                          | 0.683                  |
| Anticoagulation Discharge Preop | 16(39)                                      | 88(39.1)                                        | 0.568                  |
| Post-Op Cardiopulmonary Arrest  | 0 (0)                                       | 2 (1.0)                                         | 0.687                  |
| Post-Op Hypoxia                 | 3 (50)                                      | 3 (50)                                          | 0.066                  |
| Post-Op Pneumonia               | 1 (2.4)                                     | 8 (4.1)                                         | 0.519                  |
| Post-Op Respiratory Failure     | 1 (2.4)                                     | 2 (1.0)                                         | 0.436                  |
| Post-Op Arrhythmia              | 1 (2.4)                                     | 2 (1.0)                                         | 0.429                  |
| Length of Stay                  | 3.21                                        | 4.53                                            | 0.239                  |
| EBL (Estimated Blood Loss)      | 208.85                                      | 83.61                                           | P<0.001                |

The most significant postoperative complication was estimated blood loss, with patients with preoperative atrial fibrillation exhibiting higher rates (75 mL vs 50 mL; p<0.001). Median hospital LOS for patients with preoperative atrial fibrillation was similar (3d vs. 3d) to that for patients without (p=0.239). Discharge disposition differences between the two study groups did not reach significance (p=0.262).

## Contact

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