Introduction: Background: As the mechanisms of left atrium (LA) fibrosis associated with the recurrence of pulmonary vein atrium isolation (PVI) are unclear, this study investigated for relationships between the non-invasive fibrosis marker Galectin-3 (Gal-3) and recurrence at 6 months after ablation in patients with paroxysmal atrial fibrillation (PAF) or persistent atrial fibrillation (PSAF). The apnea hypopnea index (AHI) was evaluated as well.

Methods: Methods: A total of 161 consecutive patients who underwent radiofrequency catheter ablation (RFCA) for AF at Shinshu University Hospital between 2015 and 2018 were retrospectively enrolled (mean age: 62.3±7.4 years; 121 male; 52 PAF and 109 PSAF). Blood samples were obtained from the LA, right atrium, coronary sinus vein (CS), and femoral artery during RFCA to evaluate Gal-3. The AHI was determined using standard methods before ablation and at 6 months afterwards.

Result: Results: Gal-3 levels in the CS were significantly higher than at any other site in PSAF patients (P<0.05). CS Gal-3 and mean LA pressure were significantly correlated with 6-month clinical recurrence after RFCA (P=0.001). The area under the receiver operating characteristic curve for LA pressure associated with AF recurrence was 0.882 at a cut-off of 13 mmHg. AHI scores were significantly correlated with AF recurrence, with no improvements seen in the recurrence group at 6 months after ablation. The pre-RFCA AHI cut-off value associated with AF recurrence was 24 events/hr.

Conclusion: Conclusions: PVI achieved sinus rhythm maintenance in approximately 78% of cases during 6 months of follow-up. CS Gal-3 at RFCA and mildly high apnea scores may predict procedural outcome.