

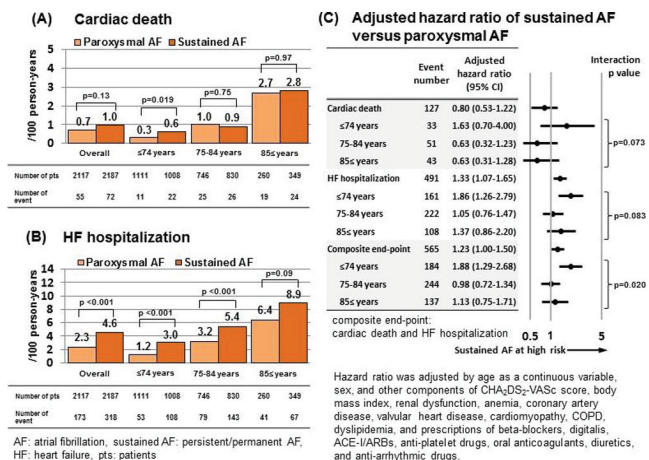
P6591
Prognostic impact of paroxysmal versus sustained atrial fibrillation on the incidence of cardiac death and heart failure hospitalization: The Fushimi AF Registry

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 On behalf of the Fushimi AF Registry investigators

Background: Heart failure (HF) often co-exists with atrial fibrillation (AF) and significantly affects the mortality of AF patients. Recent studies showed the importance of HF as a leading cause of death in AF patients. However, data regarding the association of AF type with the incidence of cardiac death and HF hospitalization remain scarce in the routine clinical practice.

Methods: The Fushimi AF Registry is a community-based prospective survey of AF patients in Fushimi-ku, Kyoto. The inclusion criterion for the registry is the documentation of AF on a 12-lead electrocardiogram or Holter monitoring at any time, and there are no exclusion criteria. We started to enroll patients from March 2011, and follow-up data were available for 4,304 patients by the end of November 2017. Of these, we compared baseline characteristics and incidences of cardiac death and HF hospitalization between patients with paroxysmal (n=2,117) and sustained (persistent/permanent) AF (n=2,187) in the entire cohort and in age subgroups (≤74 years, 75–84 years, and 85≤ years). Multivariate analysis was also performed by a Cox regression model for prognostic impact of AF type on these cardiac events.

Results: Patients with sustained AF were older (sustained vs. paroxysmal; 74.7±10.0 vs. 72.4±11.6 years, p<0.001) and had more co-morbidities such as pre-existing HF (36% vs. 18%, p<0.001), with higher CHA2DS2-VASc score (3.57±1.69 vs. 3.17±1.67, p<0.001) than those with paroxysmal AF. During the median follow-up of 1,307 days, the event rate of cardiac death was comparable (0.7 vs. 1.0 per 100 person-years; log-rank p=0.13) in the entire cohort. It was significantly higher in sustained AF only at age of ≤74 years (0.3 vs. 0.6 per 100 person-years; log-rank p=0.019), but comparable at other age subgroups (Figure A). HF hospitalizations occurred more frequently in sustained AF in the entire cohort, with increasing event rate as age increased (Figure B). On multivariate analysis after adjustment by age, sex, and potential confounders including other components of CHA2DS2-VASc score, sustained AF was associated with higher incidence of the composite of cardiac death and HF hospitalization than paroxysmal AF (hazard ratio [HR]: 1.23, 95% confidence interval [CI]: 1.00–1.50, p=0.046). In age subgroups, this association was observed only in the younger AF patients (≤74 years) (HR: 1.88, 95% CI: 1.29–2.68, p<0.001), but not in the older age groups (75–84 years and 85≤ years) (p=0.020 for interaction) (Figure C).



Conclusions: In a community-based AF cohort, sustained AF was associated with higher incidence of the composite of cardiac death and HF hospitalization than paroxysmal AF, with different relationships depending on age subgroups.

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P6592
Atrial fibrillation hospitalizations are reduced after implantable cardiac monitor implant

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Background: Atrial fibrillation (AF) imposes a significant burden on the health-

care system, which may be reduced with appropriate management strategies. The use of implantable cardiac monitors (ICMs) for AF management is not well understood.

Purpose: To assess the impact of the ICM on AF hospitalization rates.

Methods: The Commercial and Medicare Supplemental claims database was used to identify patients ≥18 years old, implanted with an ICM with a primary diagnosis of AF between 2012 and 2015. All patients selected were continuously enrolled in MarketScan with medication coverage for at least 1 year before and 6 months after implant. Only in-patient hospitalizations with AF as primary diagnosis were analyzed, and all events within 3 days of implant were excluded. An Andersen-Gill model compared 1 year pre- and post-implant cumulative hospitalization rates, adjusting for demographics, CHA2DS2-VASc score, and oral anticoagulant usage before and after implant.

Results: In 1,326 patients (age 64±12 years, 64% male, 676±77 days observation time), the cumulative AF hospitalization rates were significantly lower the year after ICM, compared to the year before (HR 0.47 [95% CI: 0.38 0.59], p<0.001), with aggregate event rates of 0.19 per pt-year pre-implant and 0.09 per pt-year post-implant. The observed reduction was preserved after exclusion of 82 patients with ablations within 3 days of ICM (HR 0.51 [95% CI: 0.40 0.64], p<0.001).

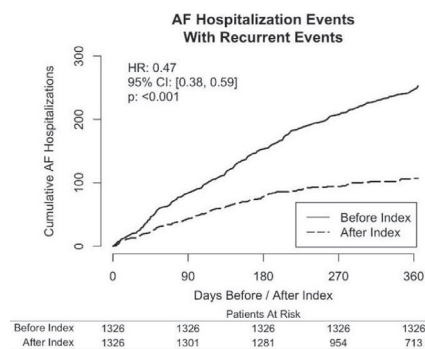


Figure 1

Conclusions: Analysis of a large, real-world dataset demonstrated a more than two-fold reduction in inpatient AF hospitalizations in patients implanted with an ICM for AF. These data suggest the benefit of the ICM in the AF population.

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P6593
Atrial low voltage zone as a novel predictor of sinus node dysfunction in patients with persistent atrial fibrillation

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Background: Although sinus node dysfunction coexists with atrial fibrillation (AF) in some cases, sinus node dysfunction in patients with persistent AF could not be estimated and predicted in conventional electrophysiological study. Atrial low voltage zone (LVZ), which may be surrogate for atrial fibrosis, is although reported to present in patients with persistent AF, the association between sinus node dysfunction and atrial LVZ has not been fully evaluated.

The aim of the present study was to assess the relationship between sinus node dysfunction and atrial LVZ in patients with persistent AF.

Method: Thirty-seven persistent AF patients underwent high density voltage mapping during AF before catheter ablation procedure. We defined LVZ as that with electrogram amplitude<0.1mV in order to delineate strongly damaged areas in atrium. The surface area of the LVZ was measured during the construction of the AF voltage maps. We evaluated the surface area of the LVZ in persistent AF patients with and without sinus node dysfunction.

Results: Eleven of 37 patients presented with sinus node dysfunction after AF termination. There were no significant differences between patients with and without sinus node dysfunction in variables such as age, sex, AF duration, left atrial diameter, and left ventricular ejection fraction. The mean value of atrial LVZ area of all the patients was 9.5±11.4%, and atrial LVZ was significantly larger in patients with sinus node dysfunction than in those without sinus node dysfunction (22.2±12.6 vs 4.0±4.5%; P=0.001). Kaplan-Meier analysis of the incidence of pacemaker implantation after the ablation procedure showed that freedom from pacemaker implantation was significantly better in patients with LVZ<9.5% than in those with LVZ>9.5% (log-rank test; P=0.001).

Conclusion: Broad atrial LVZ area measured during AF was strongly associated with sinus node dysfunction after AF termination in patients with persistent AF. Evaluation of atrial LVZ area during AF could be a potential target in predicting sinus node dysfunction in patients with persistent AF.