procedural period. In observational cohorts and one randomised study (PIONEER-AF), uninterrupted NOAC therapy has also been found to be safe in patients undergoing AF ablations. EHRA states that simple ablation procedures have a low bleeding risk while complex ablation procedures have high bleeding risk. We describe our experience of a wide variety of catheter ablations performed on uninterrupted NOAC therapy and compare our results with similar procedures undertaken on uninterrupted warfarin therapy.

Methods A retrospective analysis of the NICOR database for all ablations undertaken on uninterrupted anticoagulation at the New Cross Hospital, Wolverhampton, between April 2014 and August 2016 was undertaken. Data regarding the number and type of procedures, type of oral anticoagulation (warfarin versus NOACs), frequency of trans-septal punctures, DCCV during procedures and complications were analysed.

Results Atrial of 648 ablations were performed in the study period of which328(50.7%) were undertaken on uninterrupted anticoagulants (uninterrupted warfarin group (uW Grp): 228 (35.1%) and uninterrupted NOAC group (UNOAC Grp): 101 (15.5%). Mean age was 59 in both groups with more male preponderance in the NOAC group. A range of simple and complex ablations were done including 131 (57.4%) AF in UW Grp compared to 26 (26.5%) in the uNOAC grp. Transseptal punctures were more common in the UW Grp compared to the uNOAC Grp, however cardioversions (both external and internal) were used in similar fashion. Composite of bleeding and thrombo-embolic complications were relatively low in both the groups [n=5(2.1%) in the VKA group compared to n=1 (0.9%) in the UNOAC Grp with OR 2.21 (95% CI 0.25 to 19.2; p=0.47)].

Conclusions Our experience suggests that a wide range of simple and complex ablation procedures can be safely performed ion uninterrupted NOAC therapy. Complications in the uNOAC Grp were lower than the uW Grp, reflecting growing confidence among electrophysiologists to undertake such procedures even in the absence of antidote for majority of the NOACs.

Abstract 47 Table 1

Variables	Uninterrupted Warfarin group (n=228)	uninterrupted NOAC group (n=101)
Mean Age	59	59
Male	59%	67%
Mean CHA2DS2VAsc	2.02	2.1
Simple ablations	90	76
Complex ablations	139	27
Trans septals	149	27
DCCV	67	23
Complications	10	2

48 UTILISATION OF CARDIAC IMPLANTABLE ELECTRONIC DEVICE THERAPY IN PATIENTSWITH ATTR-WILD TYPE AMYLOIDOSIS WITH CONCURRENT CARDIAC INVOLVEMENT

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Introduction The role of cardiac implantable electronic device (CIED) therapy in patients with ATTR-wt (senile) amyloid is not very well defined. It is unknown whether there is mortality benefit or harm with the implantation of CIEDs.

Methods We performed a retrospective analysis of a prospectively collected registry of patients with biopsy proven ATTR-wt amyloid with cardiac involvement. These patients were followed up at Mayo Clinic, Rochester, Minnesota between Jan 1, 1985 to Sep 30, 2015. The follow-up of these patients was done via personal communication (written or verbal) and entered into the database. During analysis these patients were subdivided on the basis of the presence or absence of a CIED, cardiac involvement or not, and all-cause mortality analysed. The implantation of a CIED was analysed as a time-dependent covariate in the survival of these patients and Kaplan-Meier (K-M) survival plots created. Comparison between groups with CIED and those without CIED was made. In addition, CIEDs were subdivided into permanent pacemakers (PPM), defibrillators (ICDs) and cardiac resynchronization devices (CRT-P/D). Mortality among the patients with each device subtype was estimated and compared to overall mortality.

Results 409 patients with ATTR-wt and cardiac involvement were reviewed with CIEDs implanted in 101 (25%) patients. The median follow-up (25th, 75th centile) was 2.4 (1.1, 4.3) years. Utilisation of ICDs in this population was higher than the general community in Olmsted county. There was no association in the overall survival or evidence of harm with CIED utilisation in patients with ATTR amyloidosis and cardiac involvement.

Conclusions CIEDs utilisation remains high in ATTR-wt with cardiac involvement. Due diligence is needed in selecting the optimal patient for benefit prior to the implantation of CIEDs in this cohort. Further research is required to pool multicentre amyloid registry data and determine if there is mortality benefit.

49 PREDICTING RISK OF SCD IN FABRY DISEASE: A SINGLE CENTRE EXPERIENCE

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Introduction Fabry disease (FD) is a rare X-linked lysosomal storage disorder with a variable cardiac phenotype and a

Abstract 49 Table 1

Risk Predictors	Patients with VA or SCD	Patients without VA/SCD	P value
Male gender	9/13 (69%)	15/44 (34%)	0.05
Age>50 years	11/13 (85%)	20/44 (45%)	0.02
Left ventricular hypertrophy	13/13 (100%)	19/44 (43%)	0.0002
Presence of LGE	7/10 (70%)	12/38 (32%)	0.03
QRS duration>120 ms	7/13 (54%)	12/38 (32%)	0.03
Dilated left atrium	6/13 (46%)	9/44 (20%)	0.08
Stage ≥3 CKD	4/13 (31%)	11/44 (25%)	0.72
Classical variant	10/13 (77%)	30/44 (68%)	0.73
Positive HS troponin (>25 ng/L)	8/8 (100%)	16/33 (48%)	0.01
BNP >400 (ng/L)	10/13 (77%)	14/42 (33%)	0.009

defined risk of ventricular arrhythmia (VA) and sudden cardiac death (SCD). To-date however, there is no accepted tool for risk prediction in FD and the ESC calculator in hypertrophic cardiomyopathy specifically excludes lysosomal storage diseases. Data on the prevalence of VA and SCD are restricted to single centre studies and registry data. These have identified individual risk factors including age, QRS duration>120 ms, left atrial dilatation (LA), late gadolinium enhancement on cardiac magnetic resonance (CMR) imaging (LGE), and left ventricular hypertrophy (LVH). The aim of this study was to assess the prevalence of these risk factors in a Regional FD centre and to examine known markers associated with increased cardiac mortality in FD to comprehensively assess risk.

Methods This was a retrospective cross sectional observational study of patients with a proven diagnosis of FD (genetic and clinical markers) attending the Regional Centre for Rare Diseases in Birmingham between 2012–16. As part of routine annual assessment, patients underwent 12-lead ECG, 24 hour holter monitoring, transthoracic echocardiography and multiparametric CMR. The cohort was divided into 2 groups: 1) a high risk group defined by presence of either VA (≥3 consecutive ventricular beats at a rate ≥120 beats per minute) or SCD; 2) all other patients. In addition to the above 5 risk factors, genotype (cardiac variant v non-cardiac variant), high sensitivity troponin (HS Tn) and NT pro-B natriuretic peptide were included. The frequency and significance of each of these proposed risk factors was studied. Fisher's exact test was used to perform statistical analysis.

Results In total 57 patients (male gender 42%, age mean 47 ±18 years.) were studied, of whom 13 patients had a documented VA and 2 patients suffered SCD. 11/13 in high risk group were on ERT (7±6 years.) and 21/44 in the remainder (6±3.8 years.). Identified risk factors and prevalence are outlined in Table 1. Male gender, age>50, LVH, LGE, QRS>120 ms were all more frequent in those with VA or SCD but risk was also associated with increased HS Tn and NT pro-BNP. The presence of a cardiac variant genotype did not appear to influence risk.

Outcome These data confirm specific demographic, electrical and structural risk factors for VA and SCD in FD, although these are also present in those without arrhythmic events. Large multi-centre prospective studies are needed to further define the relative importance of these risk factors and their potential inter-relationship.

50 INCREMENTAL DIAGNOSTIC VALUE OF CARDIOVASCULAR MAGNETIC RESONANCE IN YOUNG ADULT SURVIVORS OF SUDDEN CARDIAC ARREST

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Background The prevalence of underlying cardiovascular disease in those who die suddenly varies with age (Finocchiaro et al 2016). Cardiovascular magnetic resonance (CMR) imaging can provide incremental *in-vivo* diagnostic value in those resuscitated from sudden cardiac arrest (SCA) but this practice is not yet supported by guideline recommendations.

Method CMR data from consecutive patients (2002–2016) referred within 6 months of resuscitated SCA were retrospectively reviewed. Patients aged >40 years of age were excluded because, for them, coronary artery disease is known to be the leading cause of SCA.

Results In total, 89 SCA survivors (mean age 28±8 years, 54% male) underwent contrast-enhanced CMR. Of these, rhythm disturbances during resuscitation were ventricular fibrillation (90%), ventricular tachycardia (7%), and a non-defined shockable rhythm (3%). The CMR study was reported as normal in 47%. The most commonly reported diagnoses (see figure A) were; dilated cardiomyopathy (18%), acute myocarditis (8%), myocardial infarction (7%), and hypertrophic cardiomyopathy (4%). Late gadolinium enhancement was present in 31%, including 5% of patients with an otherwise normal study. Eight patients (9%) were known to have a cardiovascular problem prior to SCA and 18% (n=16) had new disease identified by other investigations, such as echocardiography (see figure B). For the remainder of patients, CMR identified a new diagnosis in 26% (n=23) and excluded important structural abnormalities in 47% (n=42). The new diagnoses by CMR were early dilated cardiomyopathy (39%), acute myocarditis (30%), ARVC (13%), myocardial infarction (4%), and hypertrophic cardiomyopathy (4%).

Conclusion Contrast-enhanced *in-vivo* CMR findings in young adult survivors of SCA excluded important structural cardiac disease in 47%, which is similar to the rate in post-mortem studies. CMR provided incremental diagnostic value in the identification of potentially arrhythmogenic substrates due to acute myocarditis, ARVC, and dilated cardiomyopathy that may not be diagnosed by other standard investigations. These results therefore support a role for CMR in the assessment of SCA survivors.