86 CARDIAC AUTONOMIC FUNCTION INFLUENCES IN ATRIAL FIBRILLATION AND HYPERTENSION

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Introduction Atrial fibrillation (AF) is widely recognised as a significant cardiovascular condition associated with poor outcomes. There is increasing evidence that abnormalities of the cardiac autonomic nervous system (ANS) are involved in the pathogenesis of AF. AF and hypertension commonly co-exist and are independently associated with impaired autonomic function determined using heart rate variability (HRV). We decided to investigate whether HRV is more abnormal in patients with AF and hypertension when compared to hypertension alone.

Methods In a cross-sectional comparison, we studied two patient groups: AF and hypertension (n = 61) and hypertension control group (n = 33). Time-domain, frequency-domain and non-linear measures of HRV were determined using eMotion Faros ECG sensor. Participant's breathing was controlled with a metronome. Data was analysed using SPSS software.

Results Participants were matched for age, sex and body mass index (BMI). Time-domain and non-linear indices of HRV were higher in AF (and hypertension) group compared to hypertensive controls ($p \leq 0.01$) **(table 1)**. AF ($p=0.003$), ejection fraction ($p=0.04$) and heart rate ($p=0.04$) were independently associated with changes seen on HRV following adjustment for multiple variables.

Abstract 86 Table 1 Differences in HRV

	AF + hypertension group (n = 40)	Hypertension control group (n = 20)	p
Clinical Demographics	**Mean ± SD / Median [IQR]**	**Mean ± SD / Median [IQR]**	
Age, years	66 ± 7	65 ± 7	0.71
Sex			
Male	29	15	0.84
Female	11	5	
BMI (kg/m^2)	32.9 ± 5.2	32.1 ± 4.2	0.58
HRV Measurements	**Mean [95% CI] / Median [95% CI]**	**Mean [95% CI] / Median [95% CI]**	**p**
Heart rate	66 [61 – 72][a]	60 [56 – 66][a]	0.12
SDNN (ms)	62 [48 – 80][a]	33 [27 – 41][a]	**<0.001**
rMSSD (ms)	97 [35 – 105][b]	26 [20 – 37][b]	**0.002**
pNN50 (%)	58 [25 – 64][b]	5 [1 – 17][b]	**<0.001**
LF normalised (%)	42 [33 – 52][a*]	48 [38 – 58][a]	0.39
HF normalised (%)	58 [48 – 67][a*]	52 [42 – 62][a]	0.39
LF-i/HF-i	0.7 [0.5 – 1.1][a*]	0.8 [0.6 – 1.2][a]	0.61
SD1 (ms)	65 [38 – 74][b]	18 [14 – 26][b]	**<0.001**
SD2 (ms)	90 [72 – 108][a]	47 [36 – 58][a]	**<0.001**
SD1/SD2	0.7 [0.6 – 0.7][a]	0.5 [0.4 – 0.5][a]	**0.002**

Normally distributed data are expressed as mean ± standard deviation for descriptive data and mean [95%confidence interval (CI)] otherwise. Identified bysuperscript a. Non-normally distributed data are displayed as median withinterquartile ranges for descriptive data and median [95% CI] otherwise.Identified by superscript b. Normality test was performed using Shapiro-Wilktest. Statistical differences were tested usingindependent t-test (for parametric data) or Mann-Whitney U test (fornon-parametric data). Significance $p \geq 0.05$.

Conclusions First study investigating autonomic function in patients with permanent AF and hypertension. AF, independent of hypertension, is characterised with marked HRV and is possibly related to vagal tone.

Conflict of Interest None

87 ADAPTING ATRIAL FIBRILLATION ABLATION TO COVID TIMES: THE FEASIBILITY OF VERY HIGH POWER SHORT DURATION ABLATION UNDER MILD CONSCIOUS SEDATION

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Introduction Radiofrequency (RF) ablation for atrial fibrillation (AF) has traditionally been performed under general anaesthesia (GA) to improve procedure tolerance and efficacy, but this has been compromised during the COVID-19 pandemic due to a reduction in GA availability. A very high-power short duration (vHPSD) energy delivery protocol may reduce RF delivery times and hence overall procedure duration, potentially obviating the need for GA when using such an approach. However, the use of vHPSD under conscious sedation has not previously been reported.

We sought to evaluate first-time AF ablation using a vHPSD approach during the COVID-19 pandemic by comparing the procedural metrics and same day discharge (SDD) rates of vHPSD against cryoballoon ablation.

Methods Procedural data was collected from consecutive patients undergoing first-time AF ablation at two UK centres from September 2020 to February 2021 using either the QDot Micro catheter (Biosense Webster) or the Arctic Front Advance Pro cryoballoon (Medtronic). In the QDot group, vHPSD ablation (90W, 4 second lesions) was mandated for pulmonary vein isolation (PVI), while Ablation-Index guided 50W ablation was allowed for additional lesions. Procedures were performed under mild conscious sedation with opiates and benzodiazepines, with a default strategy of SDD in the absence of clinical concerns or adverse events.

Results 78 patients were evaluated, with 39 patients undergoing vHPSD and 39 receiving cryoablation. The procedural metrics of both groups are shown in the **table 1**. 34 out of 39 (87%) vHPSD procedures were under conscious sedation, and the 5 GA cases were all from the initial 2 months of experience with the Qdot catheter. The duration of RF energy delivery to achieve PVI using vHPSD was significantly shorter than the equivalent duration of cryothermy. Overall fluoroscopy times were shorter using vHPSD, while procedure duration was longer. There was failure to achieve isolation of all pulmonary veins in 3 (7.7%) cryoablation patients versus none when using vHPSD ablation. In the vHPSD group. 3 patients received adjunctive ablation beyond PVI: 1 had roof and floor lines; 1 cavotricuspid isthmus line, and 1 received a mitral isthmus line. No adjunctive ablation was performed in the cryoablation group. SDD rates were similar in in both groups.

Conclusion A vHPSD approach can be used with conscious sedation to achieve same-day discharge rates for AF ablation that are comparable to cryoablation. There are advantages in fluoroscopy time and the required duration of ablation delivery, as well as the versatility to handle variations in

Abstract 87 Table 1 vHPSD vs Cryoablation for first-time PVI

	vHPSD	Cryoablation	p
N	39	39	
Age / years	62.8+/-8.2	56.5+/-10.6	0.004
Female (%)	11 (28)	12 (31)	0.80
Paroxysmal AF (%)	29 (74)	31 (79)	0.59
Procedure duration / min	119+/-25	92+/-26	<0.0001
PV ablation duration / min	5.9+/-1.8	18.3+/-6.7	<0.0001
Fluoroscopy time / min	13.9+/-11.8	18.9+/-6.4	0.025
Conscious sedation (%)	34 (87)	39 (100)	0.055
Same day discharge (%)	33 (85)	34 (87)	0.74

vHPSD - very high power short duration ablation protocol, PV - pulmonary vein

pulmonary venous anatomy and additional ablation beyond PVI.

Conflict of Interest GAN - Fellowship support from Biosense Webster and Abbott, consultancy fees from Biosense Webster and Catheter Precision. DG - institutional research grants and speaker fees from Biosense Webster, Medtronic and Boston Scientific. Others - Nil

88 THE RESUSCITATION STATUS OF IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR PATIENTS ACCORDING TO ELECTRONIC HEALTH RECORDS: ARE WE IGNORING THE DEVICE?

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Background The Care Quality Commission (CQC) has recently raised concerns around resuscitation decisions in the UK. In our hospital an early resuscitation decision is made on admission, often by junior doctors, and documented in electronic notes. Concerns have been raised about the veracity of these discussions in patients with implantable cardioverter-defibrillators (ICD's). We investigated resuscitation status as documented on the electronic record for our ICD population.

Methods The ICD database was interrogated in 2020 for patients under current follow-up. Baseline demographics, hospital admissions over the past 5 years and ICD indications were documented from the electronic hospital records. All patients with an electronic do-not-resuscitate (DNR) flag on the electronic system were recorded, as were any documented resuscitation discussions and ICD deactivations between 2015 and 2020. Any patient deaths were recorded and correlated with resuscitation status and ICD status at the time of death.

Results Six-hundred and thirty-six patients with ICD's (transvenous, subcutaneous and CRT defibrillators) were identified under follow-up for the study period. The mean age of the population was 68 years old. 251 had an ischaemic cardiomyopathy, 209 had dilated cardiomyopathy, 50 prior ventricular fibrillation or tachycardia, 40 hypertrophic cardiomyopathy, 26 ARVC and the rest a channelopathy, congenital heart disease, sarcoidosis or valvular heart disease.

Thirty-seven of the 636 patients were flagged on the electronic record as being not for resuscitation (5.9%). They had a mean age of 79 and 54% had an ischaemic cardiomyopathy. Of these, only 15 (39%) had their ICD deactivated and only 12 of those at the time of the resuscitation decision (32%). 15 of the 37 (39%) patients made DNR have subsequently died. Six of these (40%) had an active ICD at the time of death.

In the 257 patients who had had a hospital admission in the study period, 34 were made not for resuscitation during the admission (13%) of whom 11 had their ICD deactivated at the time of discussion (32%). Patients with a DNR flag and an 'active' ICD were contacted about deactivation of their ICD and offered discussion with a cardiologist or specialist nurse about ICD deactivation. Of these 9/27 (33%) stated that they wanted resuscitation and the alert was removed and the ICD kept on, although 3 subsequently had the device deactivated.

Conclusions In this study the majority of patients with ICD's who were made not for resuscitation on admission to hospital did not have their ICD therapies switched off, therefore putting them at risk of unnecessary ICD shocks. In addition, one third these patients subsequently chose to be for resuscitation after discussion. These complex decisions would be improved with the early involvement of cardiologists and specialist nurses.

Conflict of Interest Nil

89 LOCAL APPLICATION AND UTILITY OF THE MADIT-ICD BENEFIT PREDICTION SCORE (MIBPS) IN SELECTION OF PATIENTS AT HIGH RISK OF 'SUDDEN CARDIAC DEATH' SUITABLE FOR PRIMARY PREVENTION IMPLANTABLE CARDIOVERTER DEFIBRILLATORS

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Introduction National and international guidelines recommend an implantable cardioverter defibrillator (ICD) for primary prevention of sudden cardiac death, in patients in NYHA Class I-III and with left ventricular ejection fraction ≤35% of either ischaemic or non-ischaemic aetiology and reasonable survival. At times, selection of appropriate patients can be challenging, calling on clinicians to balance the probability of death due to ventricular tachycardia/ventricular fibrillation (VT/VF) versus the competing risk of non-arrhythmic mortality (NAM). The validated MADIT-ICD Benefit Prediction Score (MIBPS), based on 15 clinical and technical variables, has been proposed as an objective decision-making tool to help clinicians in difficult cases. Complex devices at our centre are implanted after a multidisciplinary discussion. We therefore applied this score retrospectively to our patients with complex devices to assess its utility.

Methods N=280 new complex device implants between 2014-2017. Review of records, including device downloads, yielded 103 patients suitable for inclusion. Calculation of VT/VF Risk Score (ARS) and NAM Risk Score (NAMRS), followed by assignment of a MADIT-ICD Benefit Group (BG) [High (high ARS and low NAMRS), Intermediate (low ARS and low NAMRS, or high ARS and high NAMRS) or Low (low ARS and high NAMRS)]. On follow-up, primary outcomes identified were: occurrence of VT/VF post implant or NAM prior to any VT/VF episode.