guidelines for primary prevention and, among the latter, what the underlying cardiac diagnoses were.

Methods In a 5-year single-centre retrospective study within a large teaching hospital, we used the hospital electronic patient record to identify patients admitted with new presentation of ventricular arrhythmia, who did not have an ICD in-situ. Case-notes were reviewed to identify whether patients already had a known indication for ICD implant and to determine the cardiac background.

Results Of 779 inpatient admissions with a code for ventricular arrhythmia, 302 patients were found to have had life-threatening arrhythmia. Of these, 79 had already received ICD implant. The clinical status of the remaining 223 patients is shown in Table 1. After excluding patients with acute provocation (68) and 21 patients with severe LV impairment deemed ineligible for ICD therapy, 128 surviving patients were considered eligible to receive ICD implantation. Among these, 23 patients (18%) had a previously known guideline-based indication for primary prevention ICD treatment, of whom 10 died without leaving hospital (43.5%). 53 patients (41%) had structural heart disease not meeting criteria for primary prevention ICD (Table 2).

Conclusions Nearly one fifth of patients presenting to hospital with life-threatening ventricular arrhythmia and eligible for ICD therapy already had an identified indication for primary prevention ICD that had gone unrecognised, leading to potentially avoidable deaths. Two fifths of patients had cardiac disease falling outside of primary prevention guideline criteria. More widespread understanding of guidelines for recommending ICD therapy is important for ensuring that this treatment is offered to all eligible patients. This study suggests that current guidelines are unsatisfactory in identifying a substantial proportion of patients who may benefit from primary prevention ICD implantation.

Conflict of Interest none

73 TYPE OF ATRIAL FIBRILLATION AND ITS EFFECT ON ENDOTHELIAL FUNCTION

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Background Atrial fibrillation (AF) is associated with increased morbidity including stroke, heart failure, thromboembolic complications and high mortality. Beat to beat variation in blood flow dynamics during AF has been related to presence of endothelial dysfunction. Endothelial function can be assessed using flow mediated dilatation. Impaired FMD is associated with cardiovascular risk factors. FMD measurement using a high-resolution ultrasound has become a reliable and reproducible technique for assessment of endothelial dysfunction.

Purpose To investigate whether type of AF leads to differences in endothelial function using FMD.

Design: In a cross-sectional comparison, we studied two patient groups: permanent AF (n = 30) and paroxysmal AF (n = 31). Each participant underwent baseline blood tests, blood pressure check, electrocardiogram (ECG) and an echocardiogram. High-resolution ultrasound was used to measure brachial artery diameter at rest and during reactive hyperaemia (endothelium-dependent FMD).

Results Participants in the two groups were well matched for age, sex, clinical characteristics including body mass index (BMI), mean blood pressure, HBA1c, creatinine clearance and left ventricular systolic function. There was a significant difference in FMD between permanent AF and paroxysmal AF groups (3.1, 95% CI [2.3 – 4.8] vs 5.9, 95% CI [4.0 – 8.1]; p = 0.02). Ischaemic heart disease was identified as an independent predictor of FMD on univariate analysis (p = 0.03) but there were no independent predictors of FMD on multivariate analysis.

Conclusions Endothelium-dependent FMD is impaired in patients with AF. The duration and frequency of AF (paroxysmal AF to permanent AF) leads to worsening endothelial function.

Conflict of Interest None

74 WHY ARE CEID LEADS REMOVED EARLY? A SINGLE CENTRE OBSERVATION OF INDICATIONS FOR EXTRACTING LEADS OF LESS THAN 5 YEARS DWELL

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Background With the increasing number of device implantations in the United Kingdom and the aging population requiring repeat procedures and upgrades, lead management issues are rising. It should be relatively unusual to remove leads that have been in for a short length of time and we explore the indications for extraction of such leads in a single high volume extraction centre.

Purpose We sought to investigate indications and patterns of early (within 5 years) lead extraction in the Lancashire Heart centre and Compare this data to European data.

Methods Retrospective analysis of all extractions of leads of less than 5 year dwelling time between 19/10/2016 and 19/10/2019.

Results 85 patients had leads of less than or equal to 5 years dwelling extracted during that period. 175 leads were extracted during these procedures of which 31 were excluded from the analysis due to >5 year dwelling times. 57 patients (67%) were male and 28 (33%) were female with a mean age of 70 years.

The indications for extraction were infection (50%), lead management indications including facilitating upgrades and redundancy (19%), lead fracture (10%), erosion (9%), lead failure (4%), displacement (3%), perforation (2%), pain (1%), tricuspid regurgitation (1%) and other (1%). The indications for early lead extraction appear similar to the indications for all extractions observed in the Electra database.

There was a variation of lead manufacturers that suffered lead fracture with a small percentage of ICD leads from both Medtronic (2 ICD leads) and Boston Scientific (1 ICD lead).

We found a high number of fractures in the Boston Ingevity leads (70%) despite this lead constituting only 26% of our cohort. The majority of these leads were removed via simple traction 42 (84%).

Conclusions Infection continues to be the major indication for lead extraction although half of cases are now performed for other indications. This is comparable to European data. The indications for early lead extraction are similar to that observed for all extractions.