virtual consultations would be a further area to examine in relation to this.

Conflict of Interest None

24

PRIMARY AND SECONDARY ICD IMPLANTATION IN ADULT CONGENITAL HEART DISEASE PATIENTS FROM 2006 TO 2020: A SINGLE CENTRE EXPERIENCE

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Introduction Adults with congenital heart disease are at risk of developing sustained ventricular arrhythmias, due to the underlying structural heart disease, myocardial scarring from previous cardiac surgery, or failing systemic or subpulmonary ventricles. Therefore, there are a number of potential indications for ICD implantation, both primary and secondary. Here we describe the rates of ICD implantation over the last 15 years in adults with congenital heart disease in our centre.

Methods A local database of all patients with congenital heart disease having undergone ICD implantation was interrogated to determine details of patients with new ICD implants from the last 15 years. Information on demographics, date of initial corrective cardiac surgery, date of ICD implant and indication for ICD were obtained.

Results 113 patients were identified, of which 65 (58%) underwent primary prevention device implantation and 48 (42%) underwent secondary prevention device implantation. 41 patients undergoing ICD insertion were female (36%) and 72 were male (64%).

An overall downtrend in numbers of ICDs being implanted per year over the last 15 years was seen (figure 1A), the fall in the last 5 years being especially pronounced (figure 1B). There was a minor increase in the proportion of ICDs implanted for primary prevention in 2015 to 2020 (63%) compared to 2006 to 2015 (57%).

Time between initial corrective surgery and ICD implantation was similar through 2006 to 2020. Between 2006 and 2015 the average number of years between surgery and ICD implant was 27 years for primary prevention and 23 years for secondary. In the last 5 years the average number of years

Graph 1A

Graph 1B

Abstract 24 Figure 1

Graph 2A

Graph 2B

Abstract 24 Figure 2

Abstract 24 Table 1 Adults undergoing ICD implants in 'Other' Category between 2006 and 2015

2006-2015		
Congenital Condition	No of Pts	Primary or Secondary ICD
Ebstein's	2	Primary (1) Secondary (1)
AVSD	2	Primary (2)
Dextrocardia PS VSD ASD PDA	1	Secondary
PS	2	Secondary (2)
ASD	2	Secondary (2)
Anomalous coronary artery	2	Secondary (2)
Coarctation and bicuspid aortic valve	1	Primary
VSD	3	Primary (2) Secondary (1)

Abstract 24 Table 2 Adults undergoing ICD implants in 'Other' Category between 2016 and 2020

2016-2020

Anomalous coronary artery	2	Secondary (2)
Pulmonary atresia, VSD, MAPCAs, central PA shunt	1	Primary
AVSD	1	Primary
VSD	1	Primary
Ebstein's	2	Primary (2)
PS	1	Primary
Double inlet LV, double outlet RV	1	Secondary
Coarctation and bicuspid aortic valve	1	Primary

between surgery and ICD implant was 23 years for both indications.

Figures 2A and 2B show the underlying condition in those who had an ICD implanted over the 15 year period. These demonstrate a decline in ICD implantation for those with either Tetralogy of Fallot or Transposition of the Great Arteries (TGA and CCTGA) in the last 5 years compared with data from 2006-2015; 52% to 41%, and 30% to 22% respectively. The number of patients undergoing ICD implantation with 'Other' underlying congenital heart disease is shown to have increased from 18% of overall cases in 2006-2015, to 37% of overall cases in 2016 to 2020.

Tables 1 and 2 detail the 'Other' conditions and the indication for device.

Conclusions Despite the number of ACHD patients in the population increasing significantly over the same time period, annual rates of ICD implantation in our centre have reduced over time, especially over the last 5 years. The reason for this decline may reflect historical improvements in cardiac surgical techniques and the timing of surgery, thereby resulting in preserved ventricular function and less ventricular scar. Close, regular follow up in the modern era will likely result in early detection and treatment of structural problems which might be expected to reduce the incidence of serious arrhythmia. Regular surveillance would also be expected to allow for earlier detection of non-sustained ventricular arrhythmia, resulting in the initiation of anti-arrhythmic therapy that might prevent or delay the need for an ICD.

Conflict of Interest None

25

ADVANCE CARE PLANNING IN PATIENTS WITH SYSTEMIC RIGHT VENTRICULAR FAILURE

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Introduction Patients with transposition of the great arteries (ccTGA) and patients with transposition of the great arteries who had palliative surgery (Mustard/Senning procedures) often have progressive functional deterioration of the systemic right ventricle (sRV) and develop heart failure from the third or fourth decade of life.¹ End stage heart failure requires an integrated approach and advance care planning (ACP)² with ACHD cardiologists working alongside specialist heart failure and palliative care teams. We describe current practice with

regards to ACP and palliative care referrals in patients with sRV at a tertiary referral centre.

Methods Patients with ccTGA, Mustard or Senning procedures who were under active follow up from 2016 to 2021 were retrospectively analysed (n=122). Clinical and echocardiographic data were extracted from hospital electronic records and screened for factors which should prompt the consideration of palliative care referral and ACP as specified in prior guidance.² These were; an episode of decompensation within 6 months despite optimal medical therapy, malignant arrhythmias, cardiac cachexia, frequent or continued intravenous therapies, poor quality of life (QoL), or progressive functional decline with dependence in activities of daily living and New York Heart Association (NYHA) IV symptoms.

Results Baseline information is summarised in table 1. 7 patients had ACP (figure 1). 2 occurred during hospital admission in NYHA III patients with more than 1 episode of decompensation in 6 months despite optimal medical therapy, need for frequent intravenous therapy and chronic poor QoL. Cardiopulmonary resuscitation, implanted cardiac defibrillator deactivation and future care preferences were discussed. 5 patients had ACP as an outpatient who were NYHA I or II, which were patient initiated (n=3) and clinician initiated in response to progressive functional decline (n=1) and no identifiable prompt (n=1). 5 patients died during the data collection period (median age 41 years), 1 of which had advanced heart failure, discussed ACP and was referred to palliative care. 2 patients did not have ACP or palliative care input, however did meet the criteria for doing so (table 2).

Abstract 25 Table 1 Baseline information and demographic data

Age (mean ± std dev) years	39 (± 9)
CCTGA	37 (30.3%)
Mustard procedure	37 (30.3%)
Senning procedure	48 (39.3%)
Presence of implanted cardiac defibrillator	20 (16.3%)
1 or more comorbidities* unrelated to ACHD diagnosis	45 (36.6%)
Systemic RV function assessed by echocardiography	
Mildly impaired	46 (37.7%)
Moderately impaired	48 (39.3%)
Severely impaired	17 (13.9%)

* Major comorbidities involving a system, organ or multisystem disorder. ** Visual assessment graded by experienced congenital sonographers. Data was not available for 11 patients due to limited imaging.

Abstract 25 Table 2 Patient features and factors meeting criteria for ACP or referral to palliative care in patients that died

	Cause or mode of death	Age of death/ years	Advanced heart failure*	Had ACP or palliative care referral?	Factors meeting criteria for ACP or referral to palliative care
1	Cardiac arrest, arrhythmia**	73	No	No	Recurrent atrial arrhythmias NYHA II
2	End stage heart failure	53	Yes	Yes	Recurrent hospital admissions requiring IV treatment Progressive functional decline and QoL Dependence in activities of daily living NYHA IV
3	Cerebrovascular event	41	Yes - ventricular assist device	No	IV diuretic therapy frequency increased Progressive functional decline and QoL pre MCS NYHA III
4	Cardiac arrest**	38	No	No	Progressive functional decline, NYHA III
5	Acute decompensated heart failure	28	No	No	Frequent admissions with decompensated HF requiring intravenous diuretics Progressive functional decline and QoL limiting daily activities NYHA III

* Defined as being referred to or on the active waiting list for mechanical circulatory support (MCS)/ cardiac transplantation or MCS in situ. ** Further information inaccessible.