

Defibrillator Threshold Testing (DFT) During Implant in Atrial Fibrillation

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Background: There is an ongoing debate regarding the need for DFT testing during Defibrillator (ICD) implant. It is also unclear what is the outcome of patients cardioverted during implant. One of the reasons not to attempt DFT during implant is the risk of cardio-embolic phenomena in a patient implanted with atrial fibrillation (AF).

Methods: The study group included 346 patients who underwent ICD implantation between 1993 and 2008 at our hospital. We included all patients that were in atrial fibrillation at time of ICD implant or VT study prior to implant.

Results: 18 patients were identified who were in chronic or persistent AF from 1 month to 20 years (80%) on chronic anticoagulation (Table 1). 3 underwent TEE due to inappropriate oral anticoagulation prior to procedure. 15 men (83%), 4 (22%) had an artificial valve. All underwent DFT at implant with 14 (78%) reverting to sinus at time of DFT or during shock delivered during (EPS) prior to implant. 12 (67%) received an atrial based system. A significant number of the patients (11/14) remained in sinus for a median of 13 month. 10/12 (83%), with atrial based system. Although patients 10, 15, underwent repeat cardioversions (CV) in follow up. None had an embolic event even though we discontinue anticoagulation and normalize INR prior to surgery, and most did not undergo TEE prior to procedure.

Conclusions In our experience AF in patients with adequate chronic anticoagulation is not necessarily a contraindication to DFT testing. Counter to popular practice possibly there is even an advantage in doing DFT testing in patients with chronic AF since some patients convert and are more likely to remain in sinus with physiologic pacing.

	AGE	INDICATION	EF	DISEASE	AF	OAC	TEE	CV at EPS	CV	DEVICE	F/U MONTH
1	71	SCD HEFT	25	IHD	30M	Y	Y	N	Y	DC	3
2	61	MADIT	17	MVR	15y	Y	N	N	N	SC	AF
3	74	AVID	25	IHD	3Y	Y	N	Y	Y	DC	29
4	81	MUSTT	25	IHD	1M	Y	Y	Y	Y	DC	18M > AFL
5	77	VT	25	IHD	6M	Y	N	Y	Y	CRT	13
6	65	MUSTT	25	DCM	LT	Y	N	Y	Y	DC	11M > DIED
7	76	VT	35	AVR	20Y	Y	N	N	Y	SC	AF
8	67	MADIT	38	IHD	2Y	Y	N	Y	Y	SC	AF (1D)
9	62	VT	50	NCA	1Y	Y	N	N	Y	DC	AFL
10	77	VT	50	AVR +IHD	1M	Y	N	N	Y	DC	60
11	81	MADIT	29	IHD	1Y	Y	N	N	Y	CRT	4
12	68	MADIT II	20	IHD	23M	Y	N	N	Y	DC	7
13	74	AVID	40	IHD	1Y	Y	N	Y	Y	DC	48
14	77	VT	40	IHD	LT	Y	N	N	N	SC	AF
15	75	MADIT	20	IHD	LT	Y	N	Y	Y	DC	30M > AF
16	87	VT	40	AVR	LT	Y	N	N	Y	SC	10
17	74	MADIT	20	IHD	2Y	Y	N	N	N	CRT SC	AF
18	68	SCD Heft	20	IHD	1Y	N	Y	N	N	DC	AF

IHD –Ischemic heart disuse, CV Cardio version, TEE – Transesophageal echocardiography
AVR – Aortic valve replacement, MVR – Mitral valve replacement, LT – > 2 years of AF
SC – single chamber, DC – Double chamber, OAC – Oral anticoagulation, EF Ejection fraction, EPS – Electrophysiological study.