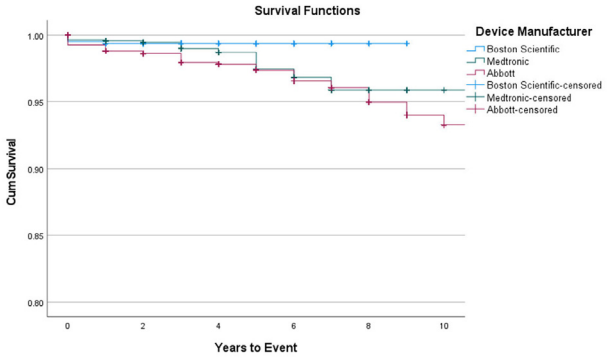
Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

significantly higher failure rate than Boston Scientific (2.6, 1.1-6.3). Although the Abbot failure numerically exceeded the Medtronic rate, the difference fails to reach significance (1.1, 0.9-1.4).
Conclusion: DF4 leads demonstrate excellent longevity profiles with overall survival >98% at 10 years. Historically higher failure rates of other leads (DF-1, etc.) seen in younger patients also occur with DF4 leads. The clinical relevance of small differences in survival rates between manufacturers remains unclear.



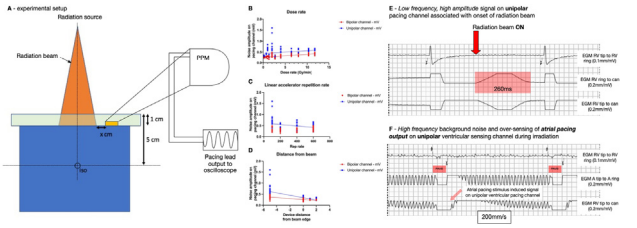
	Time (years)	0	1	2	3	4	5	6	7	8	9	10
Boston Scientific	# cumulative failures	1	6	6	6	6	6	6	6	6	6	6
	# remaining cases at risk	1045	695	504	382	265	179	102	52	12	3	0
Medtronic	# cumulative failures	1	12	13	15	21	24	33	36	38	38	38
	# remaining cases at risk	2990	2121	1673	1285	974	703	469	305	175	41	14
Abbott	# cumulative failures	1	10	15	17	23	24	27	31	33	36	38
	# remaining cases at risk	1246	1059	969	865	765	656	493	373	270	195	127

PO-632-06

REAL-TIME EX-VIVO RADIOTHERAPY IMPACTS ON PACEMAKER FUNCTION ARE MINIMAL

John Whitaker BCH, BM, PhD; Omar Kreidieh MD; Jeremy Bredfeldt; Clinton J. Thurber MD; Nathaniel Steiger MD; David Chang MD; Esseim Sharma MD; Uyanga Batnyam MD; David T. Martin MD, FHRS, CCDS; Sunil Kapur MD; Thomas M. Tadros MD, MPH; Bruce A. Koplan MD, MPH, FHRS; Raymond Mak; Neil Martin; Usha B. Tedrow MD, MS, FHRS; Paul C. Zei MD, PhD, FHRS and William H. Sauer MD, FHRS, CCDS

Background: There is a paucity of data regarding the safety of radiotherapy in patients with pacemakers and the impact of linear accelerator parameters is unclear.
Objective: To assess the function of pacemakers when exposed to different linear accelerator parameters.
Methods: Pacemakers (2 single, 1 dual chamber) were exposed to radiation at dose rates 0.2-11.8Gy/min. Dose rate was modulated by adjusting the distance from the beam edge, linear accelerator pulse repetition rate (rep rate) and distance from source. Noise amplitude, pacemaker output, and device behavior during irradiation were assessed in VVI or DDD modes.
Results: Each device was irradiated 28 times for 10 seconds. Noise amplitude on bipolar (Bi) channel increased with dose rate (r^2=0.3611, p<0.0001, B) and on unipolar (Uni) channel decreased with rep rate (r^2 = 0.09, p<0.01; C). On both channels noise amplitude decreased with distance from field edge (Bi r^2 = 0.53, p<0.01; Uni r^2 = 0.42, p<0.01; D). No over-sensed events occurred in response to radiation induced background noise. Low frequency signals on the Uni and Bi channels were observed with beam on and off (E), resulting in over-sensed events only when directly in the radiation beam and sensing Uni. When directly in the beam, oversensing of A pacing on the V sensing Uni channel was observed leading to pacing inhibition (F). Post-radiation exposure interrogation was unremarkable revealing no evidence of device malfunction.
Conclusion: Pacemaker malfunctions when directly in photon radiation beam are related to oversensing and crosstalk phenomena preferentially affecting the unipolar sensing channel. There was no evidence of long-term device malfunction upon repeated interrogations despite multiple exposures.



PO-632-07

EFFECTIVENESS OF THE WEARABLE CARDIOVERTER DEFIBRILLATOR IN PATIENTS WITH COVID-19

Nicole Bianco PhD; Nan Song; Bahar Davoudi and Steven J. Szymkiewicz MD

Background: COVID-19 (Co) is associated with a higher risk of arrhythmias, including fatal ventricular arrhythmias (VA). The mechanism is not well known, but may involve acute myocardial injury, QT prolonging drugs, inflammation and/or worsening of pre-existing cardiovascular disease.
Objective: The objective of this study was to determine the VA risk in Co pts that were prescribed the wearable cardioverter defibrillator (WCD), and to demonstrate the potential benefit of the WCD in pts diagnosed with Co and reduced ejection fraction or other need for SCD protection.
Methods: A retrospective review of the manufacturer's database (ZOLL, Pittsburgh, PA) was conducted for pts prescribed the WCD with positive diagnosis of Co at the time of initial use. From 1/ 2020 to 2/2021, 237 pts with Co (Co-pos) were fit with the WCD. 474 (1:2) case matched Co negative pts (Co-neg) (on age, gender, month of WCD start) served as a comparison.
Results: Patients Co-pos prior to WCD use (70% male, median age 68) wore the WCD for a shorter period of time than Co-neg pts (median 47 vs. 75 days, p<0.0001), but experienced higher rates of VA. Overall, 22/237 (9.3%) of CO-pos pts and 11/474 (2.3%) Co-neg pts had appropriate shocks of VT or VF. This translates to 4.9 events per patient-month of use for Co-pos pts vs 1.0 in CO-neg pts, p<0.0001). Severe bradycardia/asystole events were also more common in Co-pos pts (4.7 per patient-month vs. 0.1, p<0.0001), as were episodes of SVT (3.6 per patient-month vs. 0.36, p<0.0001), Days to first appropriate shocks did not differ significantly between the group (median 33 days for Co-pos, 23 days for Co-neg controls, p=0.49. The rates of cardioversion and survival were similar (18/22 of Co-pos and 11/11 of Co-neg pts who experienced VA).
Conclusion: In pts prescribed a WCD, rates of VT/VF are higher in pts diagnosed with COVID-19 than in those without. The rates of SVT and bradycardia are also higher. The WCD does effectively treat VT/VF in CO-pos pts. Early detection of arrhythmias may improve long term outcomes in these pts.