ARRHYTHMIC EVENTS IN PATIENTS WITH CARDIOGENIC SHOCK ON INOTROPIC SUPPORT: RESULTS OF THE DOREMI RANDOMIZED TRIAL
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Background: Inotropic support is widely used in the management of cardiogenic shock (CS) to improve cardiac output and organ perfusion.

Objective: To characterize the incidence and clinical relevance of arrhythmic events in patients with CS on inotropic support managed by medical teams blinded to the inotrope being used.

Methods: Patients with CS enrolled in the DObutamine compaRED to Milrinone (DOREMI) trial were analyzed. Patients with and without arrhythmic events (defined as arrhythmias requiring intervention or sustained ventricular arrhythmias) were compared to (1) identify factors associated with their occurrence and (2) examine their association with in-hospital outcomes.

Results: Ninety-five patients (49.5%) had arrhythmic events, occurring equally with dobutamine and milrinone (P=0.665). A history of atrial fibrillation and need for vasopressor support at inotrope initiation were positively associated with arrhythmic events whereas predominant right ventricular dysfunction and previous myocardial infarction were negatively associated with them. Atrial arrhythmic events were associated with the need for mechanical circulatory support or cardiac transplantation (RR 3.64, 95% CI 1.35-9.83) and both intensive care unit and hospital lengths of stay (6 [IQR 4-10] vs. 4 [3-7], P=0.029, and 17 [10-31] vs. 13 [8-21] days, P=0.010, respectively). Ventricular arrhythmic events were associated with the trial's primary composite outcome (RR 1.88, 95% CI 1.35-2.60), including all-cause mortality (RR 1.73, 95% CI 1.09-2.75), initiation of renal replacement therapy (RR 2.86, 95% CI 1.29-6.36), and need for mechanical circulatory support or cardiac transplantation (RR 4.85, 95% CI 1.46-16.16).

Conclusion: Clinically relevant arrhythmic events occur in half of patients with CS treated with dobutamine or milrinone and are associated with poor clinical outcomes. Ventricular arrhythmic events are most strongly associated with adverse outcomes, including a 73% increase in all-cause in-hospital mortality. Clinical factors available at the time of inotrope initiation may help identify patients most at risk of arrhythmic events. Given the purported proarrhythmic effects of inotropic agents, their role in the management of patients with CS warrants critical and rigorous appraisal.

VENTRICULAR TACHYCARDIA PRIOR TO CFLVAD IMPLANTATION DOES NOT IMPACT SURVIVAL WHEN STRATIFIED BY VAD TYPE
Summit S. Pandat MD; Peter Rothstein MD; Arvind Bhimaraj MD; Paul Antonio Schurmann MD; Amish S. Dave MD, PhD; Miguel Valderrabano MD and Nilesh Mathuria MD, FHRS

Background: Historically, the occurrence of ventricular tachycardia (VT) prior to implantation of continuous flow left ventricular assist device (CFLVAD) has been associated with worse long-term survival. In the era of more modern CFLVADs, pre-implant VT may no longer significantly impact survival.

Objective: To evaluate one-year transplant free survival by modern CFLVAD types based on the occurrence of pre-implant sustained VT.

Methods: We retrospectively studied all patients who underwent both destination therapy and bridge to transplant initial CFLVAD implantation at our institution from 2017-2019. Patients who received a simultaneous RVAD or orthotrophic heart transplant within one year after CFLVAD were excluded. We ascertained the occurrence of sustained VT in the year prior to implantation based on clinical documentation and available implantable cardioverter-defibrillator interrogation reports. Using independent sample t-tests with significance set to p<0.05, one-year transplant free survival was compared in those with and without pre-implant VT for CFLVADs including the Abbott Heartmate 3 (HM3), Abbott Heartmate 2 (HM2), and HeartWare HVAD (HW).

Results: There were 103 initial CFLVAD implants between 2017-2019, 38 HM3, 37 HM2, and 28 HW. Within the HM3 group, one-year TFS was 69% in those with pre-implant VT and 88% in those without pre-implant VT, p=0.1654. Within the HM2 group, one-year TFS was 68% in those with pre-implant VT and 81% in those without pre-implant VT, p=0.6526. Within the HW group, one-year TFS was 80% in those with pre-implant VT and 72% in those without pre-implant VT, p=0.6632. For all CFLVADs, one-year TFS was 71% in those with pre-implant VT and 75% in those without pre-implant VT, p=0.6555.

Conclusion: Contrary to prior reports, sustained VT in the year prior to CFLVAD implantation did not reduce one-year transplant free survival in this cohort regardless of the type of CFLVAD implanted. In the modern era of CFLVAD implantation, pre-implant sustained VT may not necessarily be a contraindication. Further studies assessing sustained VT in the CFLVAD population are warranted.

| Table 1: One year Transplant Free Survival in CFLVAD implants, 2017-2019 |
|------------------|------------------|------------------|------------------|------------------|
| H3M (n=38) | H2M (n=37) | HW (n=28) | All CFLVADs (n=103) |
| VT within 1y pre-implant | 12/13 (92%) | 12/13 (92%) | 11/13 (85%) | 35/42 (83%) |
| No pre-implant VT | 22/25 (88%) | 18/18 (100%) | 13/13 (100%) | 54/65 (83%) |
| P-value | 0.1654 | 0.6256 | 0.6632 | 0.6555 |

ABSTRACT CA-535: High-Power Short Duration Radiofrequency Ablation for Pulmonary Vein Isolation: Clinical Trials

Sunday, May 1, 2022
9:15 AM - 10:15 AM

THE RANDOMIZED POWER PULSE TRIAL: SAFETY AND INTRAPROCEDURAL PULMONARY VEIN RECONNECTION USING VERY HIGH POWER SHORT DURATION ABLATION (70W) VS. STANDARD ABLATION IN PAROXYSMAL AF
Marc Kottmaier MD; Leonie Foerschner; Tilko Reents MD; Carsten Lennerz MD, MSci; Felix J. Bourier MD; Miruna-Andreea Popa MD; Gabriele Hessling MD and Isabel Deisenhofer MD, FHRS

Background: Pulmonary vein isolation (PVI) using radiofrequency-ablation (RFA) in patients with paroxysmal atrial fibrillation (PAF) is effective but PV reconnection and arrhythmia recurrence due to insufficient ablation lesions remain a clinical challenge. Recent publications could demonstrate that very high power short duration ablation (vHPSD) in RFA creates more...
efficient ablations lesions. Nevertheless, data from randomized controlled trials are lacking.

**Objective:** Aim of the POWER PULSE trial is to compare intraprocedural safety and intraprocedural PV reconnection rates during Adenosine testing in patients undergoing PVI for PAF using HPSD ablation compared to conventional power settings.

**Methods:** We included n = 150 patients that suffered from PAF and where scheduled for ablation. All patients underwent PVI. N=75 patients were randomized to the vHPSD-group with an ablation protocol with 70 watts and a duration cut-off of 7 seconds at the anterior LA and 5 seconds at the posterior LA (vHPSD group). N=75 patients were randomized to the standard-group and a conventional power protocol with 30-40Watts for 20-40 seconds (Standard-group). Both groups where compared for periprocedural complications, procedural characteristics like RF and procedure duration and intraprocedural PV reconnection rates during Adenosine testing.

**Results:** Baseline characteristics where well balanced between groups and not significantly different. The vHPSD-group showed significantly less intraprocedural PV reconnections during Adenosine testing with 33% in the vHPSD group and 47% in the standard group (p < 0.02). No periprocedural thromboembolic complications or atrio-esophageal fistula occurred in either group. Mean RF and procedural time where significantly shorter in the HPSD-group compared to the standard-group with 15.7 +/- 7.2 min vs. 44.6 +/- 19.0 min (RF time) and 89.9 +/- 19.2 min vs. 114.6 +/- 27.9 min (procedural time) (both p < 0.01).

**Conclusion:** The data of the POWER PULSE Study demonstrate that vHPSD ablation is feasible with a safety profile comparable to ablation using conventional power settings. HPSD ablation using 70watts for 5-7seconds lead to significantly less intraprocedural PV reconnections during Adenosine testing. RF and procedural time where significantly shortened.

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**CA-535-02**

**HIGH POWER SHORT DURATION (HPSD) VERSUS LOWER POWER LONGER DURATION (LPLD) ATRIAL FIBRILLATION ABLATION: A PROSPECTIVE MULTICENTRE RANDOMISED CONTROLLED STUDY. THE HI-LO HEAT STUDY**

David Chien MBBS, CCDS; Hariharan Sugumar MBBS, PhD; Louise Segan; Ahmed Al-Kaisey MBChB; Benjamin M. Moore MBBS; Michael Chi Yuan Nam MBBS; Sandeep Prabhu MBBS, PhD; Aleksandr Voskoboinik MBBS, PhD; Liang-Han Ling MBBS, PhD; Jonathan M. Kalman MBBS, PhD; Hariharan Sugumar MBBS, PhD; Peter M. Kistler MBBS, PhD; FHRS

**Background:** RF ablation for pulmonary vein isolation (PVI) in AF is associated with risk of esophageal thermal injury (ETI). High power short duration (HPSD) ablation results in preferential conductive heating and increase resistive heating.

**Objective:** The aim of our study is to evaluate the feasibility, efficacy and safety of the vHPSD ablation of the for pulmonary vein (PV) isolation in patients presenting with paroxysmal or persistent atrial fibrillation (AF).

**Methods:** This prospective non-randomized study enrolled consecutive AF patients undergoing PV isolation. The vHPSD ablation was performed with the QDOT catheter, applying 90 W, for 4 s, with an irrigation of 8 ml/min. RF was delivered targeting interlesion distance ≤ 6 mm. The PVI was assessed at the end of the encirclement with the Pentaray catheter by entrance block and by remapping.

**Results:** Overall 163 patients (29 with persistent AF) were enrolled. The mean age was 61 ± 8 years, 60% had hypertension and 10% diabetes mellitus. PV isolation was obtained in all patients and at first-pass in 144 (88%) with a mean number of 83 ± 15 RF pulses. The mean procedural time was 85 ± 26 min, the mean fluoroscopy time was 9 ± 6 min and the mean RF time was 5.5 ± 1 min. In 5 patients (3%) access-related vascular complications occurred. The mean follow-up (fu) was 8 ± 3 months (fu > 6 months in 109 patients; fu > 12 months in 15 patients) and the freedom from AF recurrence was 97% in the overall population and in the paroxysmal and persistent subgroups as well (Figure).

**Conclusion:** The vHPSD ablation represents an effective and safe ablation strategy to achieve PV isolation in paroxysmal and persistent AF patients.

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**CA-535-03**

**SAFETY AND EFFICACY OF VERY HIGH-POWER SHORT-DURATION ABLATION FOR PULMONARY VEIN ISOLATION**

Vincenzo Schillaci; TERESA STRISCIUGLIO; Giuseppe Stabile MD; Alberto Arestia; Alessia Agresta MD; Armando Mariano Salito; Antonio De Simone and Francesco Solimene

**Background:** A very high-power short-duration (vHPSD) strategy of radiofrequency (RF) ablation aims to minimize conductive heating and increase resistive heating.

**Objective:** The aim of our study is to evaluate the feasibility, efficacy and safety of the vHPSD ablation of the for pulmonary vein (PV) isolation in patients presenting with paroxysmal or persistent atrial fibrillation (AF).

**Methods:** This prospective non-randomized study enrolled consecutive AF patients undergoing PV isolation. The vHPSD ablation was performed with the QDOT catheter, applying 90 W, for 4 s, with an irrigation of 8 ml/min. RF was delivered targeting interlesion distance ≤ 6 mm. The PVI was assessed at the end of the encirclement with the Pentaray catheter by entrance block and by remapping.

**Results:** Overall 163 patients (29 with persistent AF) were enrolled. The mean age was 61 ± 8 years, 60% had hypertension and 10% diabetes mellitus. PV isolation was obtained in all patients and at first-pass in 144 (88%) with a mean number of 83 ± 15 RF pulses. The mean procedural time was 85 ± 26 min, the mean fluoroscopy time was 9 ± 6 min and the mean RF time was 5.5 ± 1 min. In 5 patients (3%) access-related vascular complications occurred. The mean follow-up (fu) was 8 ± 3 months (fu > 6 months in 109 patients; fu > 12 months in 15 patients) and the freedom from AF recurrence was 97% in the overall population and in the paroxysmal and persistent subgroups as well (Figure).

**Conclusion:** The vHPSD ablation represents an effective and safe ablation strategy to achieve PV isolation in paroxysmal and persistent AF patients.