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 [5-21] 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

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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 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 61% 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.

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 Escherscher; 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