ISHLT 2023
43rd ANNUAL MEETING & SCIENTIFIC SESSIONS
Wednesday, 19 April – Saturday, 22 April
Colorado Convention Center | Denver, CO USA
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Session SESSION 06 - Pediatric M.C.S. = Multi-center Collaborative Success!

9. Advanced Cardiac Therapies Improving Outcomes Network (ACTION) Outcomes Report

April 19, 2023, 10:00 AM - 10:10 AM | Rooms 405-407

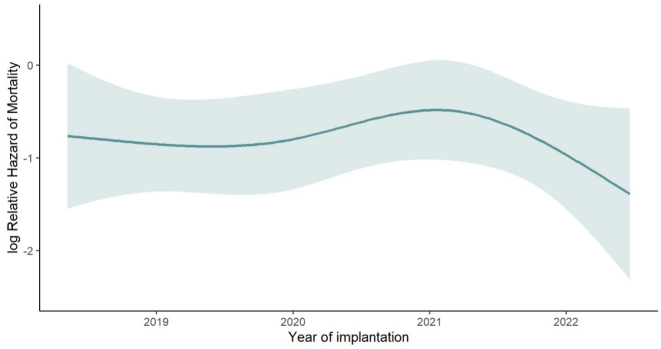
Topic:
MCS-Pediatrics/Congenital Heart Disease

Presenter
C. Bonilla Ramirez[1], M. Shezad[2], C. J. VanderPluym[3], M. Bleiweis[4], H. Tunuguntla[5], A. Joong[6], D. Rosenthal[7], A. Lorts[1], S. Auerbach[8], I. Adachi[9], R. Davies[10], M. O'Connor[11]. *[1]Cincinnati Children's Hospital Medical Center, Cincinnati, OH, [2]Cincinnati Children's Hospital, Cincinnati, OH, [3]Boston Children's Hospital, Boston, MA, [4]UF Health Congenital Heart Center, Gainesville, FL, [5]Texas Children's Hospital, Houston, TX, [6]Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago, IL, [7]stanford, Portland, OR, [8]University of Colorado, Denver, [9]Children's Hospital, Houston, TX, [10]Children's Health, UT Southwestern, Dallas, TX, [11]Children's Hospital of Philadelphia, Wynnewood, PA,*

Disclosures
C.Bonilla ramirez: None. **I.Adachi:** n/a. **R.Davies:** Consulting/Advisory Fee; ; Abbott Inc. **M.O'connor:** None. **M.Shezad:** n/a. **C.J.Vanderpluym:** n/a. **M.Bleiweis:** n/a. **H.Tunuguntla:** None. **A.Joong:** None. **D.Rosenthal:** n/a. **A.Lorts:** n/a. **S.Auerbach:** None.

Abstract or Presentation Description
Purpose The Advanced Cardiac Therapies Improving Outcomes Network (ACTION) is a collaborative, multicenter learning health care system for children with heart failure receiving mechanical circulatory support. We studied the outcomes of patients enrolled in the ACTION network.
Methods Patients undergoing ventricular assist device (VAD) implantation and enrolled in the ACTION database between 4/1/18 and 7/31/22 were reviewed. Multivariable analysis studied the association of primary diagnosis, device type, INTERMACS profile, and implantation date with mortality.
Results The cohort included 851 patients who received 1077 devices. Median age was 5.5 years (IQR 0.5-14.3), median weight 17.2 kg (IQR 6.8-53.8), and median BSA 0.73 m^2 (IQR 0.35-1.6). Cardiomyopathy was the primary diagnosis in 524 (61%) patients, single ventricle congenital heart disease (CHD) in 206 (24%), and biventricular CHD in 107 (12%). Devices implanted included paracorporeal pulsatile (408/1077, 38%), implantable continuous (307/1077, 28%), paracorporeal continuous (282/1077, 26%), percutaneous pulsatile (75/1077, 7%), and total artificial heart (5/1077, 0.46%). At median follow-up time of 3 months, 525 (62%) patients underwent transplant, 80 (9%) underwent device explant for recovery, and 114 (13%) died on VAD. On multivariable analysis, biventricular (HR 2.4, 95% CI 1.4-41) and single ventricle CHD (HR 1.9, 95% CI 1.2-3.2, p=0.003), paracorporeal continuous device use (HR 3.1, 95%CI 1.9-5.1, p=0.001), and a more severe INTERMACS profile (HR 1.7, 95% CI 1.1-2.6, p=0.02) were associated with increased mortality. Adjusted mortality has decreased over time (Figure).
Conclusion Despite heterogeneity in diagnoses and device strategy, children can be supported with VAD with excellent outcomes, although patients with CHD remain at higher risk of mortality. Over time, there has been improvement in outcomes. Unique features of the learning network

(collaboration, quality improvement, and education) are likely contributing factors.



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