Center Variability in Timing of Stage 2 Palliation and Association with Interstage Mortality: A Report from the National Pediatric Cardiology Quality Improvement Collaborative.

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Abstract

For infants with single-ventricle lesions with aortic arch hypoplasia, the interstage period from discharge following stage 1 palliation (S1P) until stage 2 palliation (S2P) remains high risk. Significant variability among institutions exists around the timing of S2P. We sought to describe institutional variation in timing of S2P, determine the association between timing of S2P and interstage mortality, and determine the impact of earlier S2P on hospital morbidity and mortality. The National Pediatric Cardiology Quality Improvement Collaborative registry was queried. Centers were divided based on median age at S2P into early (n = 15) and late (n = 16) centers using a cutoff of 153 days. Groups were compared using Chi-squared or Wilcoxon rank-sum test. Multivariable logistic regression was used to determine risk factors for interstage mortality. The final cohort included 789 patients from 31 centers. There was intra- and inter-center variability in timing of S2P, with the median age by center ranging from 109 to 214 days. Late centers had a higher mortality (9.9 vs. 5.7 %, p = 0.03) than early centers. However, the event rate (late: 8.2 vs. early: 5.8 deaths per 10,000 interstage days) was not different by group (p = 0.26). Survival to hospital discharge and hospital length of stay following S2P were similar between groups. In conclusion, in a large multi-institution collaborative, the median age at S2P varies among centers. Although optimal timing of S2P remains unclear, centers performing early S2P did not experience worse S2P outcomes and experienced less interstage mortality.