Introduction
- Despite surgical and medical advances, a subset of congenital heart disease (CHD) patients develops heart failure.  
- The frequency and successful use of pediatric ventricular assist devices (VADs) as a bridge to cardiac transplantation has expanded, but there is limited outcome data. 
- This is especially true for complex congenital heart disease and single ventricle (SV) physiology.

Case Series:
- 7 patients with ages ranging from 9 days to 6 months old, w/ average being 2.5 months

VAD Course
- The average duration was 53 days (range 3-100).
- The average number of circuit changes, cannula swabs, and connector changes were 5.3, 2.1, and 2.3, respectively.
- Only two patients required an oxygenator after CentriMag® placement.
- Complications include infection, oversize devices, large stroke volumes, & systolic hypertension
- Cerebrovascular events occur in 29% of these patients.
- Thromboembolic strokes are more frequent; but hemorrhagic strokes tend to be more devastating.

VAD Outcomes:
- There were four deaths at our institution:
  - 2 were not transplant candidates
  - 1 diagnosed w/ venoocclusive disease
  - 1 diagnosed w/ a mitochondria disorder
  - 1 patient died one week after transplant
  - 1 patient was weaned off the device but 71 days later had a cardiac arrest event

Discussion:
- SV anatomy is the most common cardiac lesion from 6 months of age to adulthood needing a heart transplant (HT).
- The reported VAD survival rate is 50% in all CHD patients, compared to the overall pediatric VAD survival of 70%-86.
- The ideal VAD for CHD must have the ability to increase flow to support both the systemic and pulmonary circulation, adaptable for left, right, or single ventricle, and come in various sizes.

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References:

Conclusion:
- Our 86% initial bridge rate is very promising.
- Improvement in survival is likely attributable to refinement in patient selection, surgical technique, and anticoagulation management.
- Further experience and refinement of these patients’ management is necessary to improve overall outcomes.