We all sit and hope that a new, miniaturized device with a blood-friendly surface will become available. Until there is a paradigm-shifting breakthrough, we continue for surgical palliation for low-risk patients and hybrid stage 1 palliation as a bridge to transplantation for greater-risk patients.

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CONG

See Article page 1451.

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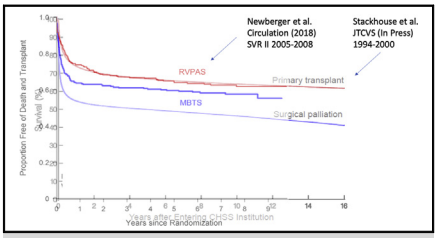
Commentary: No justification for transplantation in place of standard surgical palliation

Michael E. Mitchell, MD



Outcomes for Norwood palliation with RVPAS in SVR II overlap primary transplantation outcomes.

In their review of CHSS data from 1994 to 2000, Stackhouse and colleagues[1] make clear their point that a strategy of surgical palliation for treatment of aortic atresia during an earlier generation carried a greater early risk of death than primary transplantation. This observation led them to conclude that it may be reasonable to encourage full utilization of primary pediatric transplantation, including extension to more aggressive use of primary transplantation in patients with aortic atresia today. Although they acknowledge that improvements in outcomes have shifted this analysis considerably, they hold to the conclusion that transplantation remains a comparable therapeutic strategy, and that it might be of value to advocate for primary transplantation both for patient outcomes and to encourage full donor organ utilization.

CENTRAL MESSAGE

Primary transplantation in high-risk cases of aortic atresia may be justified, but choosing transplantation over standard-risk palliation risks harm to both patient and society in the current era.

The authors provide a more detailed analysis of the long-term comparisons between primary transplantation and surgical palliation with analysis of quality of life measures using the PedsQL and PedsQL Cardiac Module, demonstrating comparable results in functional, psychological, and quality of life indicators between children undergoing primary transplantation and those undergoing surgical palliation. Clearly, the Fontan is far from a cure. However, flipping this interpretation, it is equally clear that transplantation itself is simply an alternative but largely equivalent means of palliation.

This study identifies a prescient debate for our profession today, successfully highlighting key decision

From the Department of Surgery, Medical College of Wisconsin; and Division of Pediatric Cardiothoracic Surgery, Herma Heart Institute, Children's Hospital of Wisconsin, Milwaukee, Wis.

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Address for reprints: Michael E. Mitchell, MD, Division of Pediatric Cardiothoracic Surgery, Children's Hospital of Wisconsin, 9000 W Wisconsin Ave, MS 730, Milwaukee, WI 53226 (E-mail: Mmitchell@chw.org).

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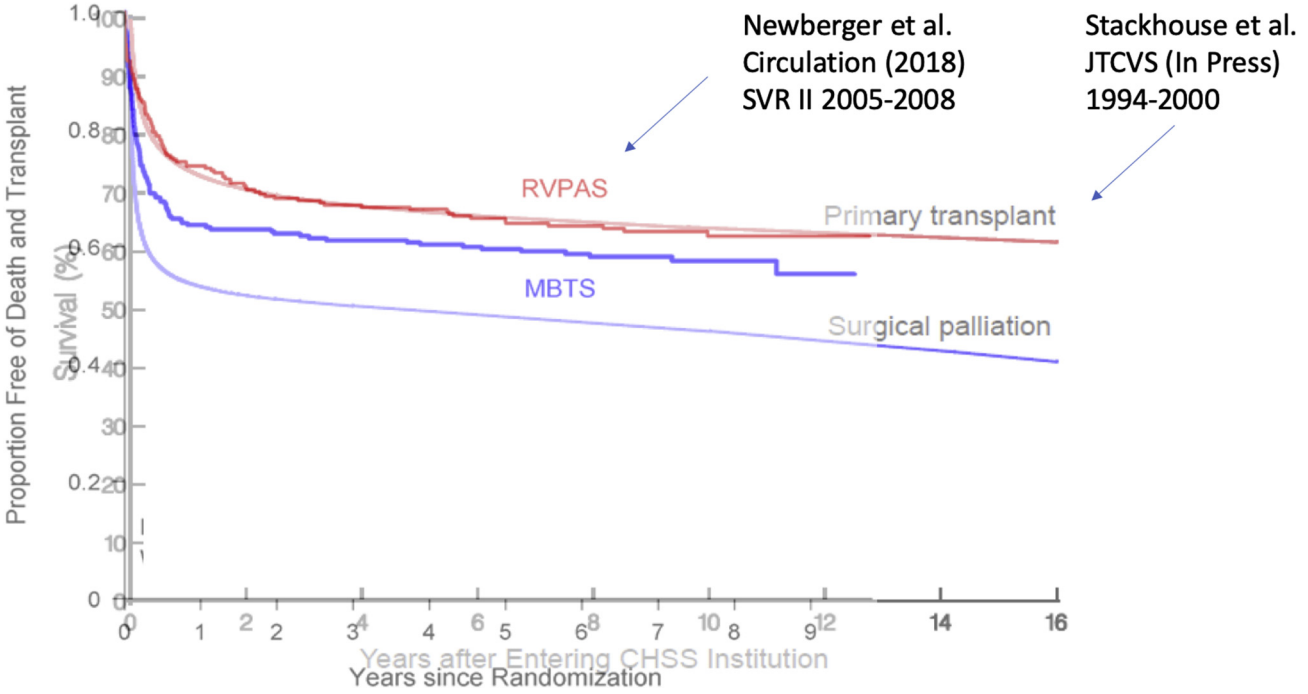

FIGURE 1. Outcomes for Norwood palliation with RVPAS in SVR II overlap primary transplantation outcomes (from Stackhouse et al[1] and Newberger et al[2]). *CHSS*, Congenital Heat Surgeons Society; *RVPAS*, right ventricle to pulmonary artery shunt; *SVR*, single ventricle reconstruction trial; *MBTS*, modified Blalock Taussig shunt; *JTCVS*, *Journal of Thoracic and Cardiovascular Surgery.*

making at critical times in the life of a neonate, infant, and child, and the potential conflict between what is best for an individual patient versus what is best for our patients as a whole. Without doubt, children at high risk for death with complex palliative operations—for example, patients with hypoplastic left heart syndrome, aortic atresia, severe tricuspid insufficiency, and ventricular dysfunction—would likely benefit from primary transplantation even in the current era. However, it must be recognized that the story is very different for standard-risk aortic atresia patients with survivorship through standard risk palliation exceeding 85% at some centers and all comers in the SVR trial exceeding 60% at 6 years, almost exactly overlapping the Kaplan-Meier curves for death following transplantation, the Figure 1 in the publication (see overlapping figure compilation in Figure 1).[2]

It may be true that all experienced congenital heart surgeons can ruefully recall patients who were at higher risk and for whom the only successful primary treatment strategy would have been primary transplantation. However, essential to this strategy is the ready availability of organs to perform the transplantation within the critical time limit.[3] Neonatal donor hearts are a scarce resource, with demand for pediatric hearts in general outstripping the supply and wait list times increasing from 2007 to 2017.[4] There are not enough available hearts to meet the need, particularly in the youngest population.

I applaud the authors on their work and agree with their consideration of transplantation in the higher-risk cases. However, a heart used for transplantation in a standard-risk patient is one that cannot be used for a patient with a much higher predicted palliative mortality rate. There remains a societal obligation to be thoughtful in allocation. Only a balanced approach will translate into the best possible outcomes for both standard-risk and high-risk patients. Only this balanced approach will provide for true strategic optimization.

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