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Congenital Cardiology Solutions

BLOOD TRANSFUSION: A NOVEL CULPRIT OF EARLY GRAFT FAILURE IN CHILDREN?

Moderated Poster Contributions
Poster Sessions, Expo North
Monday, March 11, 2013, 9:45 a.m.-10:30 a.m.

Session Title: Congenital Cardiology Solutions: Important Considerations
Abstract Category: 13. Congenital Cardiology Solutions: Pediatric
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Background: The attrition of right ventricle to pulmonary artery (RV-PA) conduits has been attributed in part to the body's immunologic response. We hypothesized that antibodies developed through blood transfusion, directed against the conduits, may result in accelerated degeneration and the need for re-intervention. We sought to analyze the association between transfusion exposure and conduit re-intervention.

Methods: This is a population-based study of the province of Quebec (Canada) with the observation period from January 1, 2000 to March 31, 2010. We included children born between January 1, 2000 to December 31, 2006 who were diagnosed with a cono-truncal anomaly and had an RV-PA conduit. The patients were followed for transfusion exposure and RV-PA re-intervention. Time to re-intervention in those exposed versus non-exposed was analyzed using Cox regression.

Results: There were 590 patients (58% males; median age at first RV-PA conduit was within the 1st year of life) who met the inclusion criteria. Patients who received a blood transfusion at the time of the initial conduit had near double the risk of a re-intervention compared to those who did not (hazard ratio of 1.913; 95% confidence interval, 1.05 - 3.49; P=0.0345).

Conclusion: In this population-based analysis, prior blood transfusion after the year 2000 was associated with a higher risk of an RV-PA conduit re-intervention. These data support the hypothesis that a blood transfusion mediated immune response may adversely impact conduit longevity.

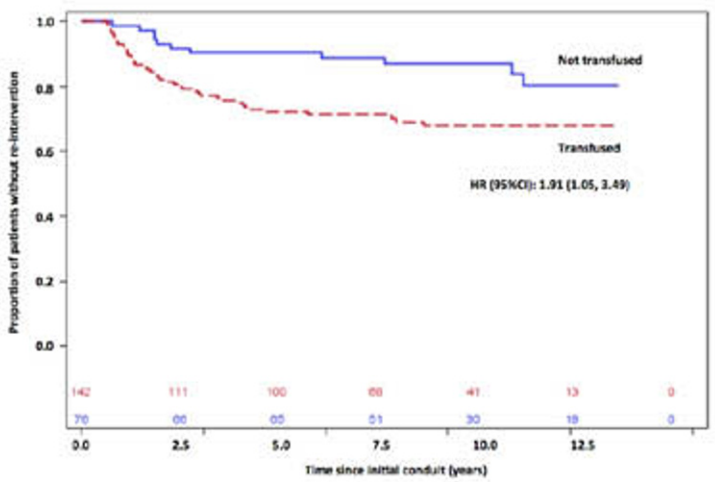

Figure 1. Kaplan-Meier curve comparing the proportion of re-intervention-free survival in patients with a blood product transfusion with those without a blood product transfusion.