Pediatric Heart Transplant Society

What's Pumping in Pediatric Heart Transplant Research?

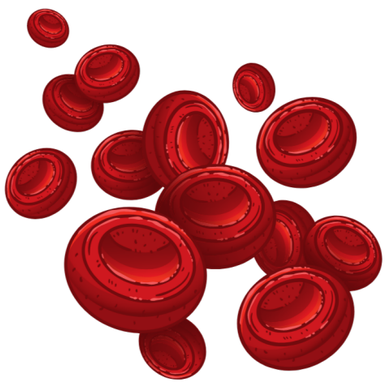
Summary of the following recently published article from PHTS

Clinical outcomes of children receiving ABO-incompatible versus ABO-compatible heart transplantation: a multicentre cohort study

Simon Urschel, MD | Jean A Ballweg, MD | Ryan S Cantor, PhD | Devin A Koehl,MSDS | Zdenka Reinhardt, MD | Warren A Zuckerman, MD | Anne I Dipchand, MD | Kirk R Kanter, MD | Joshua Sparks, MD | Marie McCoy, RN, NP | James K Kirklin, MD | Waldemar F Carlo, MD

This study compared the long-term outcomes of children who underwent ABO-incompatible (ABO-i) heart transplant (HTx) to children who underwent ABO-compatible (ABO-c) HTx. The long-term outcomes assessed included: infection, rejection, graft vasculopathy, tumors, and survival.

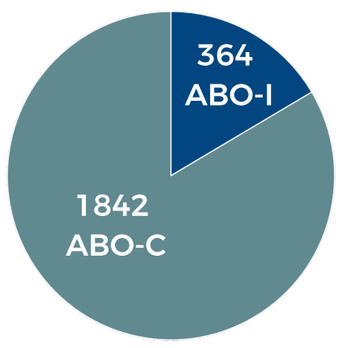
ABO Blood System and Background



The ABO blood group system assigns a person a blood group (A, B, AB or O) based on sugar molecules (polysaccharides) on their red blood cells. These same sugar molecules are on the surface of transplant organs

We typically develop antibodies against non-self sugars (antigens), usually reaching full strength between 6 and 24 months of age. These antibodies can lead to rejection in adults, but this barrier can be crossed in young children (ABOi transplant).

2206 Total Heart Transplants



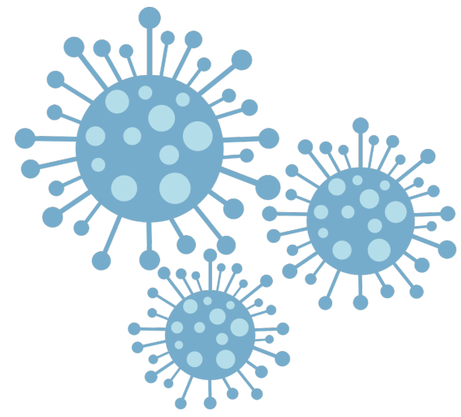
Children <2 that received HTx 1999-2018

- 364 children underwent ABOi HTx
- 1842 children undwent ABOc HTx

Children with ABOi tend to be younger and sicker, so the ABOi group was also compared to 728 children with ABOc that were matched for age, diagnosis, clinical situation, and year of transplantation.



Survival, graft vasculopathy, rejection and post-HTx tumors were similar between those with an ABO-I and ABO-C HTx.



Children with ABOi had fewer overall and bacterial infections.

Summary:

Children who undergo ABOi HTx in the first 2 years of life have equal survival when compared to children who undergo ABOc HTx. Children who undergo ABOi HTx do not have a higher risk of rejection, graft vasculopathy, or tumors. They also have fewer overall and bacterial infections. The changes in the immune system in children with ABOi do not result in a higher risk for post-HTx complications.

For more information refer to the original article:

Lancet Child Adolesc Health. 2021 May;5(5):341-349. doi: 10.1016/S2352-4642(21)00023-7. Epub 2021 Mar 18.