Speedy heart transplant for kids better than waiting for perfect match

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Children who receive a heart transplant as soon as a suitable donor is available are predicted to have better quality-adjusted survival—even if they have antibodies that may attack the new heart—than children who wait for a donor to which they do not have antibodies according to research presented at the American Heart Association's Scientific Sessions 2014.

When the costs of care while waiting for an urgent transplant are considered, transplantation with the first suitable heart is also cheaper than waiting for a better-matched organ, researchers said.

In the same way that a vaccine activates the body's immune response to fight off a virus, a donated organ can trigger antibodies to fight off foreign tissue. Because of the risk of severe rejection after transplantation, experts traditionally believed that children with these antibodies should wait for a heart that won't activate an antibody response.

But patients with the antibodies in their blood are at high risk of dying while waiting for a perfect match, said Brian Feingold, M.D., M.S., study lead author and medical director of Pediatric Heart and Heart-Lung Transplantation at Children's Hospital of Pittsburgh of UPMC and associate professor of the University of Pittsburgh School of Medicine in Pennsylvania.

He noted that as many as 20 percent of children waiting for a heart

transplant may have antibodies.

Researchers examined data of more than 2,700 children listed for transplant since 1999.Patients' average age was 5 years and 45 percent were female. More than half were Caucasian, 23 percent were African American and 15 percent were Hispanic. About half of the children were born with heart disease and all urgently needed a heart transplant.

Researchers compared 10-year survival after being listed for transplant using two opposing strategies: waiting for a donor heart to which the candidate does not have antibodies or taking the first suitable offer, regardless of potential problems that antibodies may pose. The study found that accepting the first suitable offer, regardless of antibody concerns, is predicted to:

- increase survival from the time of listing by more than 1 year (adjusted for quality of life) as compared to waiting for transplantation based on antibody status.
- cost an average $122,856 less than waiting for transplantation based on antibody status.

"Our analysis shows that denial of listing for transplant, solely on the basis of having too many antibodies, is unwarranted," Feingold said. "One of the next questions is whether low levels of antibodies identified using modern antibody detection techniques are clinically meaningful. Are they a harbinger of problems to come, or just a 'false positive' that potentially alters our care of patients with important effects on survival and costs of care?"

For their study, researchers obtained 1999-2009 patient data from the Organ Procurement and Transplantation Network. Cost data came from the Children's Hospital of Pittsburgh of UPMC and the public Healthcare Cost Utilization Project Kids' Inpatient Database.

Researchers were able to control for antibody status, wait-list time and wait-list survival, post-transplant survival in the presence or absence of a positive crossmatch, and costs. They didn't specifically examine rejection rates, nor did they examine treatments other than heart [transplant](#) or outcome among patients without antibodies.

As of June 2013, nearly 3,500 patients were waiting for a [heart transplant](#), according to American Heart Association statistics.

Provided by American Heart Association