Pediatric Heart Transplant Society

What's Pumping in Pediatric Heart Transplant Research?

Summary of the following recently published article from PHTS

Obesity and dyslipidemia predict CAV and graft loss in children and adolescents post-heart transplant: A PHTS multi-institutional analysis.

Carmel Bogle, MD | Ryan Cantor, PhD | Devin Koehl, MSDS | Jillien Lochridge, CPNP | James K Kirklin, MD | Aliessa Barnes, MD | Gonzalo Wallis, MD | Shahnawaz Amdani, MD | Rebecca Ameduri, MD | Elfriede Pahl, MD | Kathleen E. Simpson, MD | Elizabeth D Blume, MD

Previous research in adults have shown that obesity and high cholesterol is associated with an increased risk of allograft vasculopathy (CAV), loss of the transplanted heart and death.

Dyslipidemia: an abnormal (usually too high) amount of fat in your blood, such as cholesterol or triglycerides.

Population

6291

First time heart transplant patients

Age: 0-20 yrs.

Years: 1996-2018

How many children are overweight or obese and does this change over time?



1/4 of the children were overweight or obese after transplant up to 15 yrs post transplant.

Is there any association between obestiy with CAV or graft loss?

- Older children are more likely to be overweight or obese

- Children diagnosed with cardiomyopathy (compared to CHD) were more likely to be overweight or obese.

- Obese children were 52% more likely to develop CAV and 31% more likely to have graft loss.

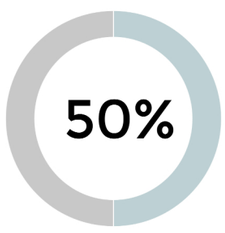
How many children had abnormal cholesterol levels and does this change over time?

- 16% of the children had abnormal cholesterol levels.

- Children with abnormal cholesterol levels are 79% more likely to develop CAV.
- Children with abnormal cholesterol levels are 58% more likely to have graft loss.

Cholesterol is a type of fat in your blood that your body needs to build work properly. Too much bad cholesterol can cause fat to sit in your blood vessels which can increase your chance of getting heart disease.

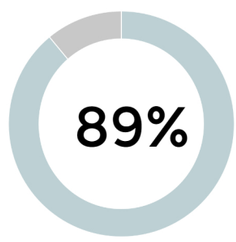
Triglycerides*



- 50% had ideal triglycerides.
- Younger patients at time of transplant and patients with CHD were more likely to have abnormal triglycerides.

*triglycerides: a type of fat stored in the body when your body does not need the energy you eat right away.

Low-Density Lipoptein (LDL)*



- 89% had ideal low-density LDL levels.

*LDL, also called "bad cholesterol" that can build up fat deposits on your heart's blood vessels.

Summary:

After transplant, children should continue healthy lifestyles including a nutritious diet and physical activity to prevent obesity and maintain normal cholesterol levels.
Programs for children that are overweight, obese or have abnormal cholesterol could potentially have a positive impact in preventing serious heart transplant complications.

Enduring Hearts-PHTS Investigator Award

Enduring Hearts
HEALTHY KIDS • STRONGER HEARTS • LONGER LIVES

For more information refer to the original article:

Pediatr Transplant. 2022 Feb 5;e14244. doi: 10.1111/petr.14244. Online ahead of print.