PROJECT INFORMATION

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Does Plasma Exchange Help Improve Physical Function in Children with Transverse Myelitis? -- The CAPTURE Study

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What was the research about?

Transverse myelitis, or TM, is a rare disease that causes inflammation of part of the spinal cord. TM can cause pain, numbness, muscle weakness, paralysis, and problems with bladder and bowel control. Because TM is a rare disease, few studies have looked at how well treatments for TM work.

In this study, the research team looked at whether a treatment called plasma exchange, or PLEX, helped improve physical function in children with TM. PLEX filters certain proteins out of a person's blood and replaces the proteins with man-made protein or with plasma from a donor. The team wanted to compare children with TM who received PLEX with children who didn't receive it.

What were the results?

Fewer children with TM joined the study than planned. As a result, the study couldn't compare children with TM who received PLEX with children who didn't receive it.

Among children with TM in the study, 11 received PLEX. In eight of these children, PLEX followed another treatment. Four had improved physical function one year after treatment. Three children with TM had PLEX alone. All three children had improved physical function one year after treatment.

During the study, the research team found a new type of TM called acute flaccid myelitis, or AFM. The original type of TM and AFM differ. As a result, the study looked at the children with TM and AFM separately.

The study found that PLEX may help some children with AFM. But given the small number of children with AFM who received treatment, these findings aren't certain.

Who was in the study?

The study included 39 children with TM and 51 children with AFM ages 0–18 who were diagnosed between 2014 and 2018. To take part in the study, children had to be diagnosed in the previous six months. Of the children, 79 percent were white, 6 percent were African American, 6 percent were Asian, 6 percent indicated more than one race, and 4 percent didn't report race; 17 percent were Hispanic or Latino. The average age at diagnosis was 7, and 60 percent were boys.

What did the research team do?

The research team worked with a patient advocacy group called the Transverse Myelitis Association to recruit children with TM. The association recruited children online and from seven hospitals that treat TM in the United States.

The research team reviewed health records to see whether children received PLEX. At 6 and 12 months after the study began, doctors looked at physical function in children who were recruited from hospitals.

Adult patients with TM, families of children with TM, and the Transverse Myelitis Association helped design the study.

What were the limits of the study?

Fewer patients joined the study than planned. Also, the study couldn't look at data for children with TM and AFM together. As a result, the study had too few children to compare treatments.

Future research could continue to look at treatments for TM and AFM.

How can people use the results?

Researchers can use the results when planning studies for children with TM and AFM.

To learn more about this project, visit www.pcori.org/Greenberg339.