Rama's dream of a carefree life is coming true

From www.theage.com.au
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Health Reporter
December 8, 2004

Liver cell transplant recipient Rama, 8, is flanked by Dr Katie Allen, left, and Dr Winita Hardikar.
Photo: *Craig Abraham*

The apparent success of Australia's first liver cell transplant is great news for many.

If everything goes to plan, eight-year-old Rama's life could change dramatically. A defective liver that has left her jaundiced and bound to a light box for treatment eight hours a day, may soon function properly after she became Australia's first liver cell transplant recipient.

It is hoped that the relatively simple procedure, in which healthy cells are infused into the liver, will enable Rama to escape the need for a full organ transplant later in life.

Born with the genetic condition **Crigler-Najjar syndrome**, Rama's liver cannot process the yellow pigment bilirubin in the blood, which is usually removed from the body through bile. "Now her liver is unable to do this, and because it's unable to do this the bilirubin builds up in the blood and can cause brain damage," said the head of hepatology at the Royal Children's Hospital, Winita Hardikar, who performed the procedure with pediatrician Katie Allen from the Murdoch Children's Research Institute.

Before the transplant, Rama would spend eight hours a day in a specially-made phototherapy box, which would process the bilirubin her liver could not. "Unfortunately this is a terrible thing on her lifestyle because as an eight-year-old she has to wake up at 4.30 in the morning, sit in this box for hours, then she goes to school, then she comes home and sits for another four hours," Dr Hardikar said. "So it's a big impingement on lifestyle, she goes to bed at midnight, and it's really surprising what a bright button she is."

The doctors took cells from a healthy donor kidney and inserted a catheter into Rama's stomach. Over an hour, they slowly injected the liver cells into the main vein that feeds into Rama's liver.

"What happens is they have this amazing ability to then find their home in the substance of the liver and take up, just like Rama's other cells," Dr Allen said.

As with a full organ transplant, Rama's body could reject the transplanted cells, so she is being treated with anti-rejection medication. But so far it appears to have been a success. Rama was able to return home yesterday and, while she still needs some photo-therapy, it will take up far less of her time than it once did. Dr Hardikar said that had Rama not had the cell transplant, she would inevitably have needed a full liver transplant.

Transplant waiting lists are long. Doctors waited 10 months for a suitable donor from which to extract the liver cells for Rama's transplant. The technique means that, in the future, one liver may provide cell transplants to many more patients, rather than just one or two.

The procedure has been used on about five to 10 children worldwide, including two with the same condition as Rama.

Dr Allen said there was potential to use liver cell transplants on adults and children with other metabolic conditions, but it was not suitable for patients with cirrhosis as the scarring of the liver made it ineffective.

For Rama, the new cells will hopefully mean freedom from phototherapy and the chance to lead a more normal life. Sporting only a small plaster on her stomach where the catheter was inserted, she said she was already feeling better and was looking forward to colouring in and playing when she got home.

Rotary clubs from around Melbourne contributed more than $250,000 towards the transplant project.