

All you need is liver

PARENT-TO-CHILD TRANSPLANTS OFFER HOPE FOR SICK BABIES

BREAKTHROUGH

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The liver — the largest and the heaviest intestinal organ in the human body — is not just big in size. It also has a large number of functions.

“The liver is one of the body’s most vital organs with a number of significant functions. If it does not work properly, it poses great risks to your life,” said Dr Suporn Treepongkaruna, paediatric gastroenterologist at Ramathibodi Hospital.

The liver produces substances that break down fats. But this triangular-shaped organ actually has more responsibilities than we might imagine. It produces urea — the main substance of urine. It produces certain protein amino acids, filters harmful substances from the blood, maintains an appropriate level

of glucose in the blood, regulates blood clotting and stores minerals as well as vitamins.

The liver is also responsible for the production of cholesterol and special proteins to help carry fats through the body as well as the production of bile that helps carry away waste and breaks down fats in the small intestine during digestion. It also converts excess glucose into glycogen — the important energy storage in the body.

Cirrhosis, a type of liver disease usually associated with excess alcohol intake in adults, is one of the illnesses that is also commonly detected in newborns. In the past, as the disease developed and progressed to the final stage, it meant the little ones were only a few steps away from death.

Thanks to cutting-edge medical technology, today there is a cure for the life-threatening disorder.

“For infants falling prey to end-stage cirrhosis, their only life-saving option is a liver transplant since the actual cause of the abnormality cannot be fixed or the condition turns so severe,” Dr Suporn said.

The final stage of neonatal cirrhosis is responsible for over 80% of newborns’ liver transplant cases, the paediatrician explained. The actual cause of cirrhosis in infants is still unknown, yet the disease is not genetic. What most often leads to cirrhosis in newborns is biliary obstruction — the blockage of the bile duct that carries bile from the liver to the small intestine, the doctor explained.

“Bile is a liquid substance released by the liver,” said Dr Suporn. “It helps to digest fats. After being produced, bile passes out of the liver through the bile duct into the small intestine. When the bile duct is blocked, bile builds up in the liver. If left unattended, patients will in the end fall victim to the final phase of cirrhosis and liver failure.”

Symptoms of bile duct obstruction can be detected in newborns only a few weeks after delivery. Babies will develop jaundice and have pale stools. A surgical procedure to fix the bile duct will be performed at this stage. However, deteriorating liver functions even after the bile duct is repaired will result in other complications including a very swollen abdomen and prolonged itching of the skin. Patients who enter the final phase of cirrhosis will become more prone to infections and bleeding followed by bloody vomiting caused by enlarged blood vessels in the oesophagus and in the stomach. At this stage, a liver transplant has to be carried out in order to save the baby’s life.

Ramathibodi Hospital is the first healthcare provider in Thailand that has successfully performed liver transplantation in infants. The first case was in 1990. At that time, the liver to be transplanted in newborns came from a deceased donor. Unfortunately, the number of donated livers was insufficient especially when compared to the number of patients on the waiting list. They died even before a matching donor was found.

And this is the reason Ramathibodi Hospital came up with a medical project in 2001 to perform liver transplants in infants by using liver from living parents instead of deceased donors.

“The project allows babies suffering from the final stage of cirrhosis to receive livers from their parents without having to wait endlessly for a matching donated liver. And this is apparently synonymous

with more chances for them to survive," said the specialist.

To be eligible for the parent-to-child liver transplant, parent and baby must first have a similar blood group. Donors will then be thoroughly screened for HIV/Aids, diabetes, hepatitis B and C, obesity, chronic liver disease and so on. X-rays, urine analysis, psychological examination and other necessary check-ups will also be carried out. Parent donors must be from 18 to 60 years old and must not have a history of regular alcohol consumption.

Recipients will also undergo a thorough physical examination and blood tests to make sure they are ready for the operation.

For parent-to-child liver transplants, two operations take place at the same

time yet in two separate rooms, Dr Suporn said. Only a portion of the liver is surgically removed from the parent while the baby's liver is also removed. After that, the donated liver portion has to be transplanted into the recipient immediately. The donor's operation takes approximately six hours while the recipient's takes eight.

But are parents going to be OK after a part of their livers have been sliced off? Of course, they are. Small babies need only a small segment of liver. If the baby weighs 10 kilogrammes, for instance, only one-fifth of the parent's liver needs to be removed and transplanted into the patient. And according to Dr Suporn, the liver has the ability to regenerate.

"The donor will have to stay in hospital for about a week after which he or she should avoid hard work for one month and should refrain from smoking and drinking alcohol. The baby, after the transplant, is required to stay for one month for hospitalisation given that some complications might develop," the paediatrician said.

Children who undergo liver transplants have to stay on immunosuppressive medicine for the rest of their lives to prevent organ rejection. In the long run, however, the immunosuppressant is likely to have a significant effect on patient's kidneys. Patients will therefore be asked to visit doctors for regular check-ups.

Ramathibodi Hospital has so far successfully performed 38 cases of parent-to-child liver transplants with about 90% success rate. More than 20 sick infants are now waiting for the rescue operation.

"After a liver transplant, children grow up like normal kids," Dr Suporn said. "They can go to school, have friends

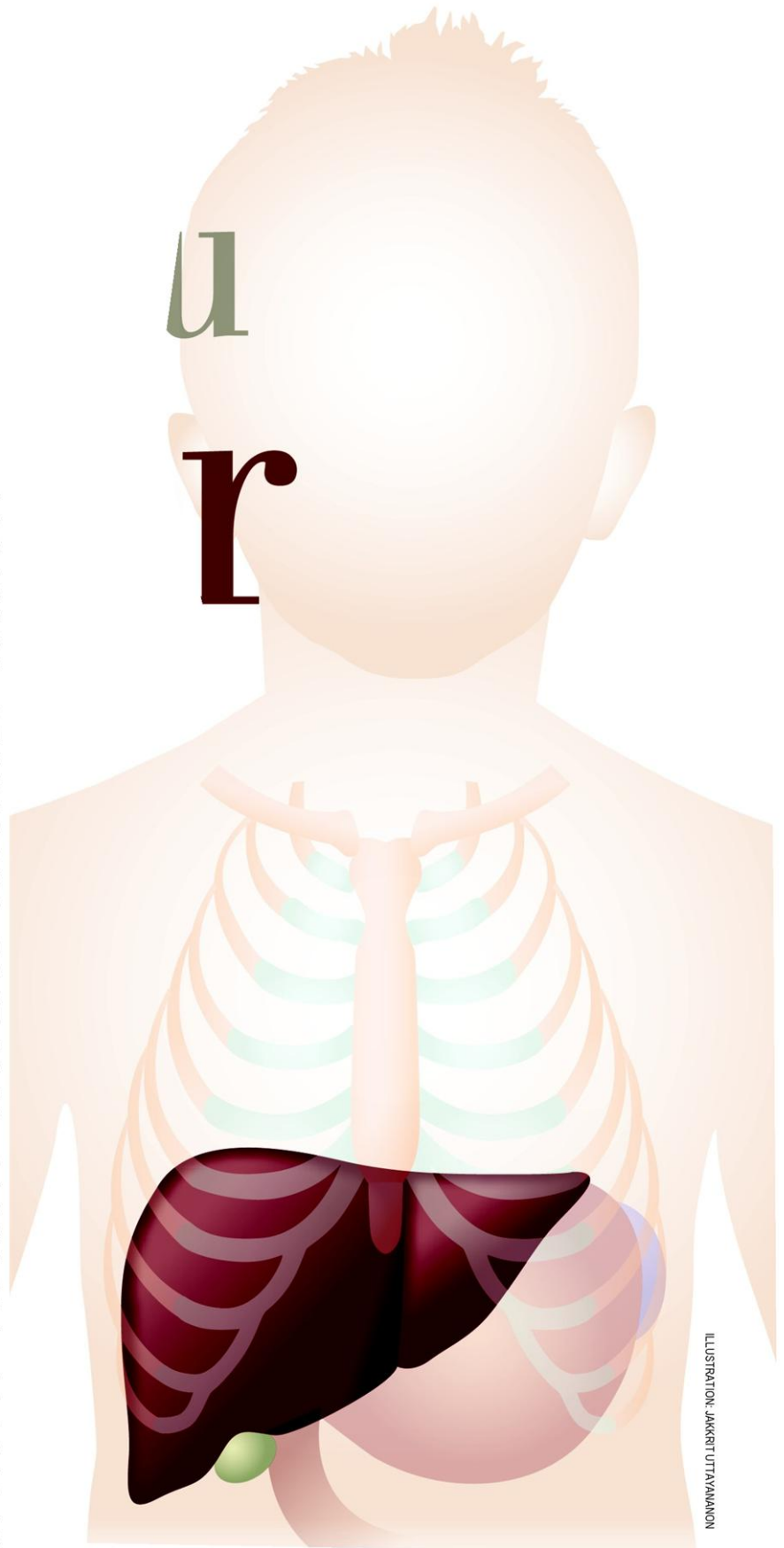


ILLUSTRATION: JAKKRIT UTTANANON

and live normal lives. Take our first liver transplant case, for example. He had the transplant 21 years ago and he is now a student at the Faculty of Dentistry, Mahidol University. The once terminally ill boy is growing up and becoming an important human resource of the country. If he hadn't had the operation, he would have died a long time ago.

"Liver transplant is a medical procedure not just to save lives. It also creates a new life for those who were once only seconds away from death."

The Ramathibodi Foundation and Siam City Hotel is holding a charity concert "Give Heart, Give Life" featuring liver transplant ambassador Kamala Sukosol Clapp and her family members Marisa Sukosol Nunbhakdi, Krissada "Noi" Sukosol, Daranee Sukosol, Sukie Sukosol and Natalia Sukosol Briones. The concert will be held on February 24 from 6:30pm at the Kamolthip Ballroom, the Siam City Hotel. All proceeds will go to Ramathibodi Hospital's "Liver Transplant from Parent to Child Programme."

To make donations to the Ramathibodi Foundation, direct money transfers can be made through Siam Commercial Bank, account name "Ramathibodi Foundation (Liver Transplant from Parent to Child Programme)", Ramathibodi branch, saving account number 026-2-01900-7, or Bangkok Bank, account name "Ramathibodi Foundation (Liver Transplant from Parent to Child Programme)", Pradipat branch, saving account number 113-4-82999-1. For more information, call 02-201-1111.