

Second chance at life

A YOUNG THALASSAEMIA PATIENT GETS TO LIVE
A NORMAL LIFE, THANKS TO A SISTER'S BIRTH AND
SUCCESSFUL STEM CELL TRANSPLANT

by S. Indra Sathiabalan

WHEN their second child was only a couple of months old, the Liews noticed that he didn't seem to be growing and that his stomach was bulging.

At first, they thought nothing of it but when little Liew Yong Tai was a year old, he was diagnosed with beta thalassaemia major.

From then on, he was getting regular blood transfusions (between one to two bags per week) because his body could not produce enough haemoglobin.

As with any other parents in the same predicament, Thanya and her husband tried alternative medicine and treatments but to no avail.

"He was very skinny almost like a skeleton. The whites of his eyes were yellow," says Thanya through an interpreter.

"He was very impatient and temperamental. He couldn't concentrate in school and we were often called to the school by the headmaster and teachers because of this."

Yong Tai, now 12, recalls: "I used to be teased by my friends because of my pale skin. They would call me Snow White. I used to get tired easily especially during physical education."

The boy's recovery is thanks to a successful stem cell transplant carried out by Prof Chan Lee Lee at University Malaya Medical Centre (UMMC) last year.

When Yong Tai was 10, Thanya saw a brochure about StemLife Malaysia, a facility that is providing cord blood stem



Umbilical cord blood stem cells are currently being used to treat blood cancers as well as other blood-related disorders such as thalassaemia."

— Prof Aw Tar Choon

cells storage services.

She decided to have a third child so that they could harvest the vital stem cells from the umbilical cord of the baby after the birth for Yong Tai.

Doctors and friends advised her against the move as the odds were high that this child, too, will have thalassaemia major.

Undeterred, Thanya went through with her plans and gave birth to a baby girl, Sin Yee. Her cord blood stem cells were collected upon birth and stored in StemLife.

Last year, Sin Yee's stem cells were retrieved for Yong Tai's transplant operation, made possible by the generous donation from Pertubuhan Tabung Kebajikan Pemindahan Sum-Sum Tulang Malaysia.

And the result could clearly be seen now. Thanya says her son is doing so much better in school and is more active.

Thalassaemia is a genetic disease that occurs in one out of four children when both parents are carriers of this disease. Thus, it is important that parents have their blood tested to find out if they are carriers or not.

StemLife currently has over 25,000 samples of umbilical cord blood samples in storage since the first sample in 2002. In January

2006, the first thalassaemia patient was treated with stem cells stored by StemLife.

It costs about RM2,500 to store a sample in StemLife and RM250 each year it is kept frozen in this cord blood stem cell banking facility.

The baby's cord blood sample as well as the mother's are collected by the attending physician immediately after birth and then given to the StemLife representative who will bring them to the facility's laboratory for testing for any diseases before being processed.

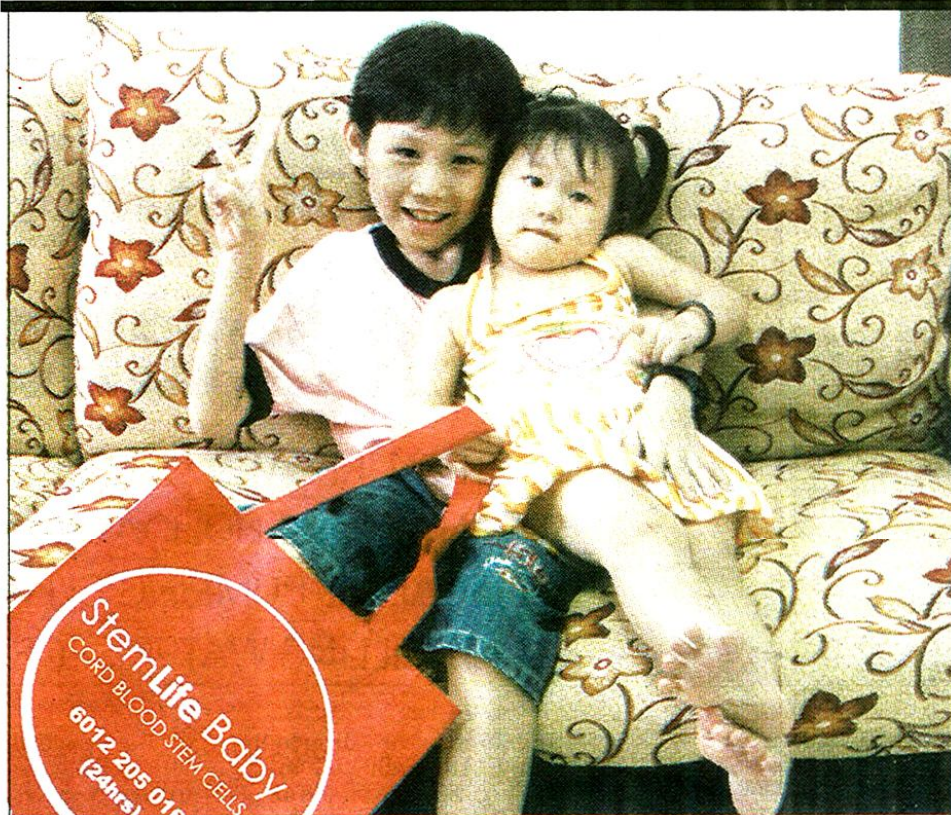
"We separate out the plasma and take the vital stem cells," explains StemLife chief medical officer Prof Aw Tar Choon. "We then reduce it down to about 20cc, bag it and add in preservatives to protect the cells during the freezing process."

Aw says this technique, which has been around for 30 years, can preserve the sample indefinitely.

He adds that umbilical cord blood stem cells are currently being used to treat blood cancers as well as other blood-related disorders such as thalassaemia.

"In the case of thalassaemia patients, they are born with the inability to form normal haemoglobin chains," says Aw.





(above) Yong Tai with his little saviour, two-year-old Sin Yee.

(below, from left) The cord blood samples are first tested in the lab and processed before being sent for storage in the cryopreservation tanks.

While those afflicted with the mild form can maintain a fairly normal life, it is another matter for those with thalassaemia major.

He says: "Those with thalassaemia major will have a severe lack of formation of haemoglobin. A consequence of that is the red blood cell's survival rate is much lower than the normal 120 days.

"In this case, it could be as low as 14 days or less.

"The only way out for the patients [at that point in time] is a blood transfusion, which only tops up the red blood cells but does not cure the disease."

Aw cautions that blood transfusion carries its own risks. "Each bag of blood you receive also comes with its iron content. Iron is hard to get rid off; once it goes in, it's hard to get it out."

Excess iron will get deposited in the brain, liver and heart, which often leads to organ failure.

With each transfusion, there is also the risk for transmissible

diseases.

Not all diseases are screened when blood is donated. Some diseases like Hepatitis C has a long window period before it makes its presence known.

Thalassaemia patients, unfortunately, cannot use their own blood cells. They have to resort to their siblings' stem cells.

Aw says that chemotherapy is then used to destroy the patient's cells in the bone marrow that cannot produce haemoglobin and replace them with the sibling's stem cells to help regrow new cells that can produce haemoglobin.

For the first year, in order to avoid these cells from being rejected by the body, Yong Tai has to take immuno suppressants.

But now, he is off medication and is living a normal life as a 12-year-old with his two sisters.

To find out more about StemLife and the uses of cord blood stem cell, log on to www.stemlife.com.

Safer way to make stem cells

RESEARCHERS said recently they had found a safer way to transform ordinary skin cells into powerful stem cells in a move that could eventually remove the need to use human embryos.

It is the first time that scientists have turned skin cells into induced pluripotent stem cells or iPS cells – which look and act like embryonic stem cells – without having to use viruses in the process.

– Reuters

