

Media	HK Magazine	Date	8 Apr 05
Section			

Cell Block HK

The opening of a cord blood storage facility last week could be the starting point for a local debate about ethical issues surrounding stem cell therapy.

By Scott Murphy

Imagine your child - or your future child - has cancer, leukemia, cerebral palsy or another major life-threatening disease sometime during their life. Where before there was often no hope, now there could be courtesy of stem cell therapy.

Excited doctors and professors will point out the recent case of the Singaporean couple whose newborn baby girl provided an infusion of stem cells for her 3-year-old brother who had leukemia. Eighteen months later, he is now in remission. They will mention the case of the 37-year-old South Korean woman who was paralyzed for 20 years. Last November, following stem cell therapy, she was able to take steps using a walking frame. "During the past 10 years, scientists and doctors have been amazed at the potential for the use of stem cells, not only to treat diseases like leukemia, where stem cell therapy has become routine, but some very hopeful findings for heart disease and cancer," claims Professor Robert Williamson, a Melbourne, Australia-based doctor whose qualifications include 40 years experience, 400 publications and consulting work with the World Health Organization. "It makes stem cell therapy one of the hottest things in science today."

The awareness will undoubtedly heat up in Hong Kong following the opening last week of Cordlife, the first private storage bank for umbilical cord blood in the city. After similar branches opened in the last few years in Singapore, Thailand and Indonesia, the Wan Chai-based company hopes its base here will become the regional hub, with a major eye on China where many advances are currently being made in the field. "What we're interested in is taking cord blood from the client and storing it for the future use of that client," says Cordlife CEO Ian Brown. "It's using your own cells for your own purpose."

"That is, as long as you sign on the dotted line before your child is born. For at the moment of delivery, it's that crucial cup of blood attached to the umbilical cord that provides the richest source of cord blood stem cells that a child or adult will ever possess. "These cells are so valuable they can reconstitute a blood system and perhaps even a liver or a muscle," claims Williamson, who is not affiliated with Cordlife. The obstetrician, using a kit sent over from Cordlife, would then send it back to their lab, where it would be tested for purity, stored in a bloodpack about the size of a deck of cards, and kept cryogenically at minus 196 degrees Celsius for an indefinite period of time. "Our role at Cordlife is a pretty simple storage system," claims Brown.

There is absolutely no reason to believe that Cordlife is anything but

on the level with potential clients. A visit to their storage facility reveals an immaculate, sparse white room. The lab is designed to be dust free, which accounts for the specially built metal ceilings. It has a storage capacity for 10,000 separate samples, with access to another Cordlife-owned facility if need be. This process won't be free though. It will cost, at the outset, HK\$11,500 per year with annual fees accrued on top of that. "With 50,000 births per year in Hong Kong, we want to make sure the city has the same opportunity to store cord blood that some other leading societies have. Hong Kong is also starting to get more involved in research in the area, and we would like to be on the doorstep monitoring the situation to see where we can make linkages," claims Brown.

This is where many in Hong Kong could potentially begin to take a keen interest in a field that, until now, has largely gained awareness due to the optimistic statements of the late "Superman" actor Christopher Reeve, who was paralyzed from the neck down in a mid 90's riding accident. "The great thing that Christopher Reeve did is give people hope," says Williamson. "He knew the only hope he had was cell therapy."

However, along with that hope comes several logistical and ethical issues that haven't really gotten out of the starting gate in this city yet. China, to cite just one country, is experimenting with stem cells from aborted fetuses. "China is making huge advances in this arena," says one insider who wished to remain anonymous. Just late last month, for example, a 64-year-old woman in Beijing suffering from motor neurone disease (which reduced her ability to eat and talk), received stem cells from aborted fetuses that were inserted into her brain via holes drilled in her skull. "So far I have no side effects," she claimed according to a story reported in the "New Zealand Herald," one of many countries where that practice is banned.

All involved in stem cell therapy readily agree there are no legal or ethical issues involving cells from umbilical cord blood at the time of birth. "There are two types of stem cells. One is the embryonic and one is the adult stem cell," says Paul Tam, Vice-Chancellor and the Chair of Pediatric Surgery at Hong Kong University (HKU). "There's very little argument about adult stem cells. We're more concerned with how we can unravel the huge potential of stem cell therapy for mainstream diseases." Currently, it's estimated there are 70 diseases that can be treated or even cured using adult stem cells. "This is an important area," he continues. "Not only scientifically but for society."

As Tam and fellow HKU colleague Dr. Kathy Cheah are quick to point out though, funding for research here is rather limited. "A lot of stem cell research requires a lot of resources and investment money," says Cheah. "That sort of money is rather limited in comparison to a place like Singapore." This puts the city at a disadvantage, though Tam stresses the current government mechanism for funding is a "fair system." A spokesperson for the Health, Welfare and Food Bureau claims they are monitoring the development of stem cell research and therapy "closely" and adds that "there is no regulation on obtaining stem cells from adult and cord blood." A license, however, has to be obtained for embryo research. In anticipation, Tam claims HKU already has plans in place to discuss many of the issues that are looming. "HKU will be forming an ethical group who have been acting in this arena. This will have ethical, legal and social implications," he claims. "There are a dozen of us from different sectors acting from an academic standpoint. As a responsible university engaged in stem cell research, we need some people disassociated from the research to look at it." He adds they are discussing potential collaborations with reputable mainland institutions.

When asked, Tam wasn't aware of Cordlife's opening but doesn't have any issues with it. "If people can afford it," he says frankly. "It gives you a glimmer of hope. The breakthrough is much more imminent than we realize. The possibilities are endless." As it stands, the oldest cord blood sample has been stored in New York for 18 years already. Theoretically, it can be stored forever, or for as long as it takes until someone needs it, if at all. With over 1,000 children worldwide already utilizing the cord blood to get a second chance at life, this choice - this issue - will undoubtedly be discussed more frequently in this city. "At the least," says Williamson, "parents will know they've stored a very valuable set of cells for their children in the event their child will need those cells in the next few years." That is, of course, if you can afford it. ■

A LOOK AT HOW CORD BLOOD IS PREPARED FOR CRYOGENIC STORAGE AT THE NEW CORDLIFE LABS IN WAN CHAI.



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