

HEALTH INSURANCE

Stem cell banks are now expanding their storage facility to umbilical cord tissue, normally discarded as medical waste

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STEM cell banks will no longer throw the umbilical cord in the wastebasket after collecting the umbilical cord blood. The cord's lifesaving cells—also known as mesenchymal stem cells (MSCs) in scientific parlance—will be extracted and cryogenically preserved in nitrogen for 15 to 20 years. Along with cord blood stem cells, cord tissue is expected to offer a new hope for those battling diseases like cancer, cardiac disorders, spinal cord injuries, stroke or diabetes.

Stem cell banking majors like Reliance Life Sciences and LifeCell International are now introducing cord tissue banking. The collection process is claimed to be non-invasive, painless and usually devoid of infection. The complete service of cord blood stem cell and processing of cord tissue for harvesting stem cells comes at a cost of Rs 63,100 for the first year and annual storage fee of Rs 5,500 for the next 20 years. The overall cost could work out to Rs 1,17,500 for storing and processing of cord blood and cord tissue.

Earlier, after the collection of the umbilical cord blood for stem cell harvesting, the remaining solid cord tissue was discarded. However, extensive research has revealed that the cord tissue is a rich source of mesenchymal stem cells. These stem cells are superior to bone marrow MSCs as these cells are more robust. "With increasing awareness, there has been a lot of interest amongst young parents-to-be and cord blood banking as a concept is catching up in India," says KV Subramaniam, president and CEO, Reliance Life Sciences.

According to Subramaniam, India is

following in the footsteps of the United States, Canada, Singapore, China, Malaysia and the UK in providing cord blood and cord tissue banking services.

Currently, it is estimated that over 30 institutions and hospitals are engaged in stem cell work. The attraction for players in the developed world is India's relative cost advantage. "For instance, LifeCell plans to charge about \$2,500-3,000 for diabetes treatment and \$10,000-14,000 for cancer. In the West, similar treatment for diabetes would cost about \$8,000-10,000 and for cancer it could go up to \$1,00,000, which means India has a huge potential to attract foreign patients," says Hitesh Gajaria, executive-director, KPMG India.

Every year out of around 2.5 million births in India, 5,00,000 are potential clients, given the pricing of approximately \$1,500 per umbilical cord (banked for 21 years), the market is worth \$750 million. "With stem cell therapy proving to be the emerging treatment for the future, cord blood banking is one of the cheapest alternatives. Stem cell transplantation facilities are increasing in India, but for optimal utilisation of these facilities, it is important to create concept awareness, which is currently lagging behind," adds Gajaria.

Nevertheless, several other stem cell banking companies and healthcare providers like Apollo Group of Hospitals and Cryobanks are expected to soon offer cord blood and cord tissue banking in the country. Manipal Group has also invested large sums for research into stem cell therapy. Other companies that have ventured into this arena include Biological E, Nicholas



Piramal and Dr Reddy's Laboratories.

According to Mayur Abhaya, president and executive-director, LifeCell International, mesenchymal stem cells from bone marrow have been at the forefront of therapeutic strategies for a number of hitherto incurable ailments like heart disease, diabetes, stroke, osteoarthritis and Crohn's disease.

Mesenchymal stem cells from cord tissue have shown additional therapeutic potential in animal models to treat Parkinsonism, skeletal muscle injury, limb ischemia and retinal nerve degeneration. Hence, these cord tissue MSCs appear to be superior to bone marrow MSCs and can be a potential substitute for them. LifeCell's cord-tissue storage hopes to leverage research undertaken by companies in the US for applications in heart and spine-related disorders, among others.

As part of Reliance Life Sciences' ReLiCord offering, the company offers a combined storage service to parents-to-be that comprises cord blood banking, along with umbilical cord and cord tissue-derived mesenchymal stem cells banking. "As an end product, we store a piece of cord tissue with millions of stem cells. The storage conditions are same as that of cord blood stem cells," says Subramaniam.

According to him, stem cell-enriched cord blood is used as a therapy for the treatment of thalassemia, leukaemia and sickle cell anaemia and is an adjunct therapy for aggressive chemotherapy. "We are also providing enriched cord blood stem cells for transplantation to patients with haematological disorders. Parents who bank their child's cord blood and tissue can look forward to potentially benefiting from progress in these areas," he adds.

Similarly at LifeCell, preserving the cord tissue comes as a package along with cord blood banking service at a cost of Rs 44,600 for the first year and Rs 3,500 every year as annual storage fee. "In a country like India with over 40 million births every year, the potential for cord blood and tissue banking is immense. It is a cost-effective treatment on a massive scale and we see a huge opportunity ahead," informs Abhaya.

Recent success stories of stem cells and breakthrough in clinical trials are validating the potential of stem cells thereby increasing the demand for storing the baby's stem cell for future potential use. With easy payment options, the concept of complete health cover for the child could become affordable by the common man too.

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