

FREEZING OUR BABY'S UMBILICAL CORD IS ALMOST LIKE A HEALTH INSURANCE

by Manu Moudgil

DIVYA MAKHIJA was shocked when doctors told her that her newborn son Saideep had cerebral palsy. "He was normal when he was born, but developed very high jaundice after six days which led to brain damage and cerebral palsy," she recalls. The usual treatment for this is physiotherapy, recommended to help a person regain the limbic movement and speech lost by the diminished blood supply to the brain. But in Saideep's case this didn't help. "We tried this for three years, but it still didn't help our child to find the strength to sit or walk," says Divya.

But last year things changed when the Makhijas decided to try out stem cell therapy from a New Delhi-based firm Nutech Medworld. Today the improvement in their son's condition is palpable. "The stiffness is gone and he can move his legs and hands. He can sit and play and his attention span has also improved. We hope there will be even more progress," Divya says. Medical tests show that the blood flow to the child's brain has improved; the healthy stem cells have replaced the damaged cells which were unable to carry oxygen to the brain, thus helping the body to retain its normal function.

Saideep is one of many people who has benefited from the rejuvenation promised by stem cell therapy. Dr R P Centre for Ophthalmological Sciences, AIIMS, claims to have corrected the vision of more than 100 patients with corneal injury using stem cells whereas the Nchi-in Centre for Regenerative Medicine (NCRM)

Stem cell therapy involves the replacement of damaged cells by healthy ones and has been the most exciting and controversial treatment of the past year

in Chennai reports a significant improvement in the condition of those suffering from spinal cord injuries, liver cirrhosis and ischaemic heart diseases.

Stem cell therapy involves the introduction of new healthy cells into damaged tissue to target diseases and rejuvenate the body.

These healthy cells are either extracted from the patient's own body or from suitable donors. From diabetes to Alzheimer's, spinal cord injuries, heart ailments, blood disorders, the list of the diseases for which stem cell is being used successfully grows longer every day. India has around 15 big centres doing research and providing therapy via stem cells. At least six organisations have already reached advanced stages of clinical trials. In addition there are seven licensed banks operating in the country which store cord blood cells from the umbilical cord when the child is born. These cells can be used during times of need at any stage of life. With

interest growing in this field, the cell banking sector in India has witnessed a growth rate of 25-30 per cent year-on-year basis. The Stem Cell Global Foundation, a New Delhi-based organisation promoting stem cell research, estimates a compounded annual growth of 15 per cent for the industry, which is expected to cross Rs 2,200 crore next year. The Indian regulatory environment is supportive of stem cell research. Ethical and governmental barriers impede stem cell research (particularly involving embryonic stem cells) in the west, and experts believe that such barriers add to the advantage for countries like India. The cost-effectiveness of stem cell treatment here adds to this advantage. "Any stem cell treatment in west costs 3-5 times more than in India, so there's a huge inflow of

people from western countries and the Middle East," says D Balasubramanian, the president of Stem Cell Research Foundation of India and the Director of Research at L

Who Knows?

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Vidhu and Nilesh Singal have got the cord blood cells of their daughter preserved



V Prasad Eye Institute, Hyderabad.

But growth is not only in terms of cash inflow. In March this year, Bangalore-based Stempeutics Research received clearance from the Drug Controller General of India to conduct human clinical trials to develop drugs using stem cells. With this, India became the first country after the US to allow human clinical trials to develop drugs. "The next 4-5 years will see a number of injectible drugs with stem cells coming to the market. This is like taking the technology to the doorsteps of patients which is what all research should strive for," says Karan Goel, founder and chairman of Stem Cell Global Foundation. Reliance Life, a pioneer in stem cell-based research in India, has already

commercialised two products. Last year, the company launched ReHNetra, a first-of-its-kind treatment in India for corneal blindness. Recently, it launched ReHHeal-G, which quickly heals wounds.

WHILE THERE are many positives in India's armour, there are two major developments which are expected to catapult India to the next level. The recent lifting of the ban on embryonic stem cell funding in US would also mean more fillip for research in India. "More funds would come India's way and there would be a slew of collaborations with

foreign partners. India is a cheaper alternative for research and clinical trials. Since the country is not too far behind the US in terms of practical aspects of stem cells, many companies are eyeing India," says Dr Balasubramanian.

Another significant breakthrough involves reprogramming of normal body cells to make them function like stem cells found in the human embryo. "The future of stem cell research lies in this technology and scientists the world over are excited about this," says Dr Samuel J.K. Abraham, the director of NCRM. L V Prasad Eye Institute in Hyderabad, NCRM in Chennai and the Christian Medical College, Vellore, are already working with this technology.