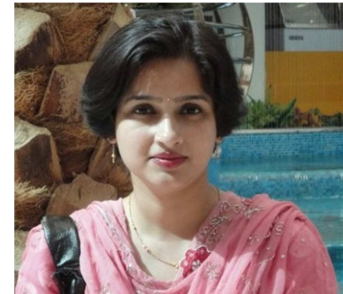


Stem Cell Banking: A Precious Gift to a Child from Parents



Stem cells are considered as the master cells that have the capability to self-renew, multiply rapidly and transform into any other type of cell. In the recent era, collection of stem cells from umbilical cord blood is becoming popular. Umbilical cord blood is defined as the blood that remains in the umbilical vein and placenta at the time of birth.

Why cord blood stem cells are considered as the Biological Magicians. According to various researches, it has been found that these stem cells are 1) Biologically younger and are more malleable than adult stem cells collected from other sources like bone marrow, 2) They have been used successfully to treat nearly 80 diseases with over 30,000 transplants worldwide with minimum complications, 3) Instantaneously accessible and can curtail disease progression in early treatment, 4) Decreased rate of rejection when used in transplants, 5) Used effectively in the treatment of diseases which lack medical treatment options, also known as “autologous transplantation”, 6) Low risk of viral contamination and tumor formation. Stem cells can heal the body, promote recovery, and offer an enormous amount of therapeutic potential.

Is preservation of umbilical cord blood an obligatory or improvident investment? Fruitful medical use of stem cells is intensifying at a rapid pace, thus collecting and cryopreserving cord blood is no longer regarded as luxury in life, but is considered as sensible investment towards a family's future health. Globally, stem cells are being used to treat various cancers like leukaemia and lymphoma and various inherited metabolic disorders. It is believed that in the recent future, stem cell therapy holds great promises to treat incurable diseases like diabetes, Alzheimer's

and cerebral palsy. At the time of emergency, match able stem cells are challenging to obtain through public cord blood banks; however, newborn's umbilical cord blood proves to be a perfect source of stem cells for life time.

What is umbilical cord tissue banking? Wharton's jelly or umbilical cord tissue is the mesenchymal stem cell rich tissue surrounding the umbilical vessels in the cord. Mesenchymal stem cells have many unique functions including the ability to inhibit inflammation following tissue damage, secrete growth factors that aid in tissue repair, and differentiate into many cell types including neural cells, bone cells, fat cells and cartilage.

What is the future of stem cell treatment? Emerging research studies have proved that only the upper surface of the knowledge of the advantages of stem cell has been scratched. The expansion of new technologies in the treatment of diseases confirms the bright future of umbilical cord cell or tissue banking. Previously these cells were used only for the transplantation and treatment of certain malignancies and metabolic diseases. But now, the scientists are using the properties of these cells for treatment of various other diseases which involve regeneration/repair of joint damage, modulating or reducing inflammation, treating neurological disorders etc. New technologies that allow for the expansion of cord blood cells means that effective autologous therapy will be achievable well into adulthood.

Stem cell banking? Stem cell banking is an easy, harmless and unproblematic procedure that is done immediately after birth during cutting of the cord.

"The cord blood collected is then transferred to the laboratory and frozen in cryogenic storage tanks for long-term preservation. Nowadays, the preservation of whole umbilical cord is preferred by some banks. Cord blood can be stored by cryopreservation for future use for your child or any other family member. The baby will have a 100 per cent match with these cells and siblings will have 25 per cent match. This once in a lifetime opportunity helps preserve a biological resource for future use.

But is banking worth it for most people? The banks argue that it's a form of "insurance" in case your children ever get sick. However, many medical associations -- like the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists -- don't support the practice for most people. They say that possible benefits are too remote to justify the costs. According to most experts, the odds that a child will ever use his or her own stored cord blood are small. According to a 2005 editorial in the journal *Obstetrics and Gynecology*, the chances are about one in 2,700. The American Academy of Pediatrics suggests it's more like 1 in 200,000. Indisputably, there are very few documented cases of a child receiving his or her own banked cord blood as treatment. The Institute of Medicine says that there may only have been as few as 14 total of these procedures ever performed. One reason is that the conditions cord blood stem cells could help treat just aren't that common.

What is Public cord blood banking? This is an alternative to private banking. Some parents decide to donate their child's cord blood to a public cord blood bank for free, which makes it available to anyone who needs it. Most doctors and medical organizations favour public donation. In most of the country, a public donation isn't even possible. There's no system in place. So for many people, the choice isn't between public and private banking. It's between private banking and letting the cord blood go to waste.

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