



stem cell industry UPDATE

SCIENTIFIC NEWS

UMBILICAL CORD BLOOD STEM CELLS HELPFUL FOR BRAIN ISCHEMIA (10/03/2011)

Brain ischemia is a condition in which there is insufficient blood flow to the brain to meet metabolic demand, generally due to the occlusion of an artery. The lack of oxygen supply results in death of brain tissue. Studies based on rat models shows that hUCB infusion up to 48 hours following experimentally induced ischemic brain injury, improves lesion-impaired neurological and motor functions. In fact, sensorimotor and behavioral improvements after transplantation were impressive in most studies, even though the evaluations were performed based on different scales.

It is believed that these improvements aren't due to the differentiation of hUCB in vivo (into neural cells) but rather to an indirect effect, such as an inflammation reduction. Several large-scale clinical trials are currently running. They promise to deepen our understanding of the mechanisms involved. HUCB is considered a promising treatment for ischemic brain injuries.

Source: Science Direct (White Paper available – 9 page document)

UMBILICAL CORD STEM CELLS TO ADVANCE REGENERATIVE MEDICINE (11/08/2011)

In this review, Prof. McGuckin and Dr. Forraz show that umbilical cord blood and tissue are well placed to be at the center of future regenerative medicine. With 135 million births per year over the world, this is the most abundant source of stem cells. When compared to bone marrow, cord blood stem cells are more HLA tolerant: allowing for a lower level of matching. Umbilical cord blood stem cells also helped reduce the incidence of graft-versus-host disease. What is more, cord blood stem cells are readily available from biobanks. The cell dose in a cord blood unit, which has long been a limitation in transplantations, is now progressively being overcome. Double and triple cord blood units are being used successfully and stem cell expansion has made considerable progress in recent years.

The future applications of cord blood could well lie in regenerative medicine. Autologous cord blood has shown highly encouraging results in several auto-immune diseases, such as Lupus. Since the first successful cord blood transplantation in 1988, over 20'000 cord blood transplants have been performed worldwide.

Source: Online Library (White Paper available – 6 page document)

AUTOLOGOUS UCB TRANSFUSION FOR CP IN TODDLERS SAFE AND FEASIBLE (01/01/2011)

Cerebral palsy (CP) is a relatively common motor disorder caused by neurological lesions, often following hypoxic-ischemic brain injury. CP affects 2.1 per 1000 births. It can be highly debilitating, resulting in hemi, di- or quadriplegia and disturbances of sensation and cognition. There is currently no known cure and the lifetime cost is high: nearly 1 million \$.

Hematologists think cord blood, due to the type of stem cells it harbors, holds great potential for future cell based neurological therapies. This study is the first report of an autologous umbilical cord blood based intervention in children with CP. It combined these injections with G-CSF injections, a stimulating factor recently being identified as having neuro-protective properties. The study is the first to show that "UCB transfusion in young children with CP seems feasible and safe." Furthermore the healthcare providers observed favorable motor changes such as standing and mobility that were improbable to happen within such a short span after the completion of the protocol. However, further studies are needed to fine tune the administration of cord blood and G-CSF.

(White Paper available – 6 page document)

MILESTONE STUDY SHOWS 23.5 YEARS STORAGE OF CORD BLOOD IS EFFICIENT (10/03/2011)

The length for which cord blood can be cryopreserved while holding a high potential has been a hotly debated issue.



It is key to cord blood banking, as parents wish to keep this protection for their child for as long as possible. Dr. Broxmeyer, a world leading figure in the hematology field has just published a paper that further extends the storage length during which cord blood retains a high potential. Dr. Broxmeyer's paper, published in the most influential hematological journal in the field, *Blood*, shows that storage of cord blood for up to 23.5 years yields good results. At 23.5 years, the recovery of functional Hematopoietic Progenitor Cells, compared to pre-freeze cord blood, was still highly efficient, at 80-100%. The proliferative potential, response to multiple cytokines and replating of HPC colonies was extensive. Furthermore, CD34+ cells showed long term (over 6 months) engrafting capability.

Proposing 25-year contracts for customers thus follows the advancement of science. Further studies will tell whether, as many believe, cord blood can be efficiently stored for an even longer period.

White Paper available – 21 page document)

STEM CELL NEWS

SCIENTISTS GET GRANT FOR RESEARCH TO CURE PREMATURE BABIES' BLINDNESS USING STEM CELLS (18/05/2011) Source: Belfast Telegraph

Scientists at Queen's University in Northern Ireland are looking into stem cells to help them find a cure to Retinopathy of Prematurity (ROP), a type of blinding process that affects premature babies. Premature babies, due to their premature lungs, need extra oxygen to breathe. This additional oxygen will damage the blood vessels that supply the eye's light sensitive retina and cause it to stop growing properly. The retina thus will not get enough nutrients. New blood vessels will eventually grow, in an attempt to rescue the retina, but they will be abnormal and cause substantial damage, leading to vision loss.

Dr Derek Brazil was awarded a two year grant by Action Medical Research. Dr. Derek will investigate whether stem cells from babies' own umbilical cords might have the power to repair their damaged eyes and save their sight. He said: "We hope our laboratory work will reveal whether vascular stem cells have the potential to repair damage to babies' eyes and save their sight."



RESEARCHERS USE MSCS TO PATCH HEART (06/05/2011) - Source: Eurekalert

Scientists at Columbia University have developed a new method to patch a heart damaged by myocardial infarction following heart attack. They removed the cells of a human heart muscle, just leaving the protein scaffold with intact architecture and mechanical properties. They then used human mesenchymal progenitor cells, which they had previously conditioned to maximize their ability to revascularize and improve blood flow, to fill the scaffold and applied the patches to damaged heart tissue.

Those patches helped the growth of new blood vessels and released proteins that stimulated the native tissue to repair itself. Doctor Vunjak-Novakovic, Professor of Biomedical Engineering at Columbia University's Fu Foundation School of Engineering and Applied Science said: "By enabling regeneration and replacement of our damaged tissues, we can help people live longer and better."

MIXED HEMATOPOIETIC STEM CELL TRANSPLANT SAVES BOY (07/05/2011) Source: News Tonight

Moinam Paul, a five year old boy living in West Bengal (Eastern India) has been saved by his sister's stem cells. The boy suffered from thalassemia and doctors advised his parents to have a second child because, as they put it, a sibling's stem cells are "his only chance (to be cured)." Moinam's sister, Ahoma, was born about a year later. Tests revealed the tissues of the siblings matched and the treatment could proceed.

A mixed transplant, combining cord blood and bone marrow stem cells, was deemed best. The goal was to use the advantages of both sources. Namely, the cord blood from a sibling minimizes the risk of graft-versus-host-disease while bone marrow has a higher cell count. It is estimated that Moinam has a chance of cure of about 90 percent.

AUSTRALIAN CLINICAL TRIAL TO USE UCB FOR CEREBRAL PALSY (02/04/2011) - Source: The Age

Umbilical cord blood has long been believed to be a potential cure for cerebral palsy. Dr. Joanne Kurtzberg at Duke University in the USA has infused the cord blood of about 250 children and has determined that the treatment is safe. Her team has since moved to the next phase: to determine the effectiveness of the treatment. Children treated with their own cord blood have shown significant improvement in their condition. Little Zac, 5, now back to Australia from after having had a reinfusion, experiences five times less seizures than before.

These encouraging results have led researchers at Melbourne's Monash Medical Centre, Australia, to launch their own clinical trial for cerebral palsy. They will offer the treatment to 20 children to determine whether autologous UCB reinfusion can cure or relieve cerebral palsy. The trial is due to start this year.



DID YOU KNOW

Newborn stem cells from umbilical cord blood have been used in more than 20,000 transplants worldwide during the last 20 years to treat more than 70 diseases in both adults and children. Cord blood stem cells are safe, effective, approved for therapeutic use and have unique characteristics compared with other sources of stem cells.

Stem Cells are not only used to treat genetic diseases. Stem Cells are now being used to treat:

- Heart Muscle
- Rheumatoid Arthritis
- Blindness
- Open Wounds & Ulcers
- Diabetes
- Multiple sclerosis

CRYO-SAVE SOUTH AFRICA NOW OFFERS PARENTS AFFORDABLE, INTEREST FREE PAYMENT PLANS. IT IS IMPORTANT THAT THIS ONCE IN A LIFE TIME OPPORTUNITY IS MADE AVAILABLE TO AS MANY PARENTS AS POSSIBLE.



CONTACT US

To receive the White Papers of all or any of these studies please contact us by phone or email:

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COMMON MISCONCEPTIONS ABOUT STEM CELL STORAGE

People think stem cells are readily available in public banks

Yes, there are stem cells available in public banks however finding a suitable tissue match is incredibly difficult (1:100 000) and if you are of African or mixed race decent your chances are at 1:400 000.

People think that Stem Cell Therapies are used to only treat genetic blood disorders

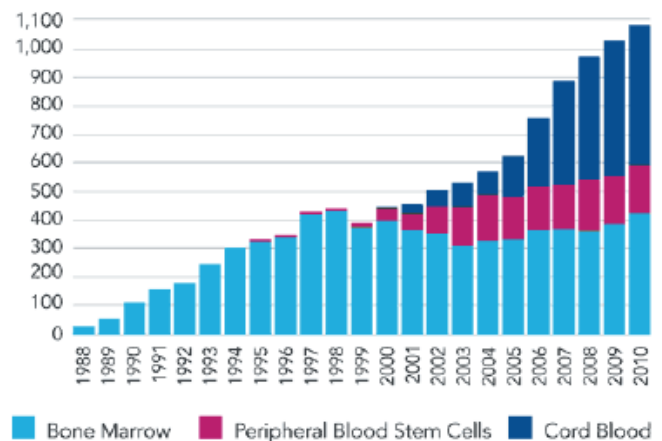
In reality there are only a few genetic diseases treated with stem cell technology. Today, stem cells are commonly used to treat blood related disorders and promising research shows huge developments in heart muscles repair, diabetes, rheumatoid arthritis, multiple sclerosis, spinal cord repair, open wounds etc. We are all susceptible to these non-genetic medical ailments – therefore the future of stem cell therapies cannot be ignored.

People think that stem cells expire after 10 or 20 years

Research presented in the Dr. Broxmeyer paper shows that stem cells stored for 23 years still yield 80-100% viability suggesting that stem cells can be potentially stored for decades to come. Therefore Cryo-Save South Africa does not limit their storage periods to 10 or 20 years but rather allow their clients to store indefinitely with a minimal annual fee (currently R168 incl once a year) and no hidden costs or renewal fees.

People think that cord blood stem cells are not routinely used for treatments

The adjacent graph from the American National Marrow Donor Program shows the sharp increase of cord blood stem cell transplants vs the traditional bone marrow stem cell transplants. Pediatric recipients (age younger than 18 years)



Source: National Marrow Donor Program FY 2010

National Marrow Donor Program*
Entrusted to operate the C.V. Bill Young Cell Transportation Program,
including the Be The Match Registry*

People think that Stem Cell Storage is expensive and unaffordable

Cryo-Save South Africa now has 4 payment plans giving parents the opportunity to make use of this once in a lifetime opportunity.

Pricing starts from **R275 per month**:

- Full Payment
- 12-Month-Interest-Free-Plan
- 24-Month-Interest-Free-Plan

Doing a search on the donor registry costs approximately R75 000, to get the stem cells here from overseas will cost approximately R450 000. The total cost for treatment can be as much as R1.2 million, but with your own stored stem cells that are suitable for transplant this may save you approximately R600 000. Storing your baby's stem cells at birth is a life changing decision.

Pricing includes VAT, Winter Special pricing valid from 4 July to 1 September 2011. Terms & Conditions apply.

**FOR AN UPDATE ON THE LATEST DEVELOPMENTS WITHIN THE STEM CELL INDUSTRY,
PLEASE FEEL FREE TO CALL US DURING OFFICE HOURS ON THE NUMBERS BELOW**

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