

A Message from the staff Cell Biology Scientist:

It is a very exciting time in the world of cellular therapies. Every day I am amazed at the publications and announcements of new clinical trials. The medical science community is diligent to better understand how hematopoietic stem cells, (those from cord blood) function in the body resulting in more successful treatments with cord blood every year. In this newsletter we'll take a brief look at new developments in the world of cellular therapy, and how NECBB continually moves forward with the developments and trends in the field.

-Matthew Wilgo, Cell Biology Scientist



Your Cord Blood, More Useful Than Ever! Advances in Cord Blood Therapies

Cord blood can be used to treat over 80 diseases with many more being researched every day. You have taken the important step to preserve your children's cord blood, knowing that if necessary, you will have a powerful treatment option available. Research and clinical trials are also investigating how to make cord blood more effective as well. One way science is looking to do this is by expanding the stem cells in cord blood, thus making more treatment options for older individuals, and generally improving outcomes.

Currently there are five 'must watch' clinical trials underway to expand cord blood (1):

1. Fred Hutchinson Cancer Research Center
2. MD Anderson Cancer Center/Mesoblast
3. Duke University/Gamida-Cell
4. Gamida-Cell/Teva
5. University of Minnesota/Novartis

As you can see there are well recognized medical/scientific institutions involved keeping these clinical trials on the forefront. What is even more encouraging is the success these trials have been having. One recent publication in the scientific journal *Cell Stem Cell*, reports great results of one of these expansion technologies, StemRegenin-1 (SR-1) from Novartis in partnership with University of Minnesota. From the article there are some very significant results (1):

- SR-1 produced a 330-fold increase in CD34+ cells (cord blood stem cells)
- Successful engraftment in all 17 patients
- Significantly faster than engraftment compared to treatment un-manipulated cord blood.
- Results that support testing of SR-1 expansion as a stand-alone graft

Definitions

Engraftment – When your new stem cells find a 'home' in your body and start making healthy blood cells.

Expansion – The growth of cord blood stem cells, often in a laboratory setting.

Clinical Trial – A study performed at one or more hospitals to determine if a treatment is safe and effective.

With successful in vitro cell expansion, small cord blood units may one day treat all fully grown adults; recovery times will be quicker leading to improved outcomes. Expanded units could be standalone grafts and that is key. Currently the safeguards built into all clinical trials of this nature have a backup unit transplanted as well. In vitro cell expansion could potentially reduce and/or eliminate the need for backup units.

Another success story comes from positive results of the phase I/II clinical trial from Gamida-Cell alongside Duke University. Their expansion technology, called NiCord, also looks to expand cord blood to improve outcomes. Recently they reported (2),

• "...positive top line results from the Phase I/II study of NiCord, in development as an experimental treatment for patients with blood cancers." Gamida-Cell also hopes to launch a phase III study by the third quarter of 2016. Following these studies, it might be possible NiCord may be used as a sole graft source as well.

What does this mean for you? It means that your investment in banking cord blood is growing in value over time. These technologies, when approved by the FDA, will grant access to more diseases, for more people, and improve outcomes for all. These are just two examples of the success of cord blood expansion. Other technologies look promising as well. And that is the goal: to have chances at longer, healthier, disease free lives. So keep banking that cord blood, it is more useful than ever!

Always Open, Always Safe, Always Ready for You

New England Cord Blood Bank is in operation every day of every week, 365 days a year. Inclement weather is no deterrent for our dedicated staff and NECBB has invested in state of the art equipment to protect your cord blood as well.

An example is our state-of-the-art Kohler backup generator. While New England is pretty much one of the safest regions in the country, we do get occasional storms (and snow) and every once in a while there is a threat of power loss. The Kohler generator is our safety net. All processing capabilities from biosafety cabinets to controlled rate freezers are backed up by the Kohler. The entire cryogenic department - tanks, monitoring systems - are protected by the Kohler backup generator as well. The system activates immediately in the event of a power loss. The Kohler generator can run for days independently. Even more assuring is that we have automatic deliveries to keep the generator running even in the unlikely event power is out for an extended period of time.

Our commitment to you is second to none. Be assured your cord blood is safe and secure with New England Cord Blood Bank.

References:

- (1) Wagner, J. E., Brunstein, C. G., Boitano, A. E., DeFor, T. E., McKenna, D., Sumstad, D., ... Bleul, C. C. (2015). Phase I/II Trial of StemRegenin-1 Expanded Umbilical Cord Blood Hematopoietic Stem Cells Supports Testing as a Stand-Alone Graft. *Cell Stem Cell*. 10.1016/j.stem.2015.10.004
- (2) Gamida Cell, Multi-Center, Phase I/II Study of NiCord® for Blood Cancers, Demonstrating Rapid and Durable Hematopoietic Recovery

Did you miss an issue?

Did you miss an issue? Find previous newsletters at our website: www.cordbloodbank.com

Do you have a question you'd love to see addressed in a future newsletter? Please let us know, we'd love your feedback. We are here to serve your needs.

Dr. Grace Centola, Laboratory Director

Thank you for choosing NECBB to store your child's cord blood and tissue stem cells. Should you ever have any questions, please do not hesitate to contact us by phone, or email me directly at: DrGrace@cordbloodbank.com



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