

Article Dr. Timothy Vollmer, Former Director of Neurology Clinical Research at the University of Colorado, Anschutz

RESEARCH PROPOSAL

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Hello,

As we discussed, stem cell therapies for helping patients recover function in the setting of multiple sclerosis, have demonstrated promise in animal models. Some modest benefit has been seen in human studies, but the ability to deliver adequate numbers of stem cells to the appropriate places in the brain remains a major problem.

There are a number of different stem cell lines that can be generated for MS patients, including inducible pluripotent stem cells (iPSC which can be generated from stem cells in the saliva). They can be expanded in-vitro to large numbers and injected back into the patient. In this case, the cells are identical to the patients' cells and will not be rejected by the body. There are other stem cell lines that can also be used.

It would help advance the field dramatically if there was funding for a dedicated center for neurological repair using stem cells that was founded at a large academic institution where it had access to most advanced technologies for delivering stem cells to areas of brain and spinal cord injury. The main opportunity is to develop techniques for injecting the cells intra-arterially into blood vessels, supplying the areas of injury such that large numbers of cells can be delivered where needed, which would substantially improve the opportunity for recovery of function. Such a center would not only need to have access to the most advanced angiography and imaging techniques but would also need access to molecular biology laboratories that can help engineer the cells, so that they can cross from the circulation into the tissues of interest efficiently. This can be done by engineering cells to express adhesion molecules that allow the cells to stick to the post-capillary walls and migrate into the tissue of interest.

Such a center would need long-term funding to provide a stable platform on which to develop the technologies needed for using stem cells to repair the nervous system and perform the human studies to perfect the technique, such that it can be FDA approved and moved into clinical medicine.

UPDATE

Text message from Doctor Vollmer to me on December 21, 2022

The kind of grant I think would help facilitate this research is called a Center Grant or Center of Excellence Grant.

The idea is to identify a few centers that have complementary skills and technologies and combine them into a virtual center to achieve a specific goal.

Normally, we would establish a working group to identify the needed technologies, then identify the centers needed to optimize the chance of success.

Best Regards,
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