

Quick Review of Model System Research

Challenges to Translation and the Hippocratic Oath by Premature Termination of Spinal Cord Stem Cell-Based Trials¹

What is the article about?

Increasing numbers of experimental spinal cord injury studies applying stem cells after are mirrored, by a lack of well-controlled clinical studies with long-term follow-up. Monitored long-term follow-up is required to learn about durability of putative cellular treatment effects and whether late side-effects may occur. Recently, non-medical reasons have led to a discontinuation of stem cell trials. This elicited a concerted statement by physicians, some involved in those trials, about how to safeguard translation of spinal cord injury stem cell research. The authors argue that including clear rules for ending a study early should be required prior to the funding of the study. The authors argue that premature termination negatively affects many aspects of clinical research. These include: a. lowering the acquisition of knowledge, b. a negative effect on collecting data for long term studies, c. lowering interest in developing interventions for orphan conditions, d. loss of secondary outcomes that often reflect satisfaction and other patient centered outcomes, e. erosion of patient/subject trust, and, f. may impact overall safety of participants.

What does the article describe?

The authors discuss the premature termination of two visible clinical stem cell trials that the authors led or in which they were involved. The studies mentioned did not have exit strategies for premature termination. The authors embed their finding by surveying the status of present stem-cell spinal cord trials in Europe and North America. Spinal cord stem cell research studies that ended early make up 7 out of 15 research projects, pinpointing to the prevalence of the problem.

What does the article recommend?

The authors make several recommendations for a more efficient clinical translation of stem cell research and to assure that the enrolled patients are not left alone with a risk of treatment side effects, which would otherwise undermine the Hippocratic Oath. First, the authors argue that there must be clear study termination rules. There must be an orderly post-termination plan. Next, sponsors should be required to guarantee resources for patient follow-up in studies that have been prematurely terminated. This includes those employing stem cell technology for spinal cord injury interventions. Lastly, it is emphasized that judgment on whether there are “exposures or adverse effects with no benefits or outweighed by harm” should be the responsibility of a data safety monitoring board, and not based on strategic economic decisions. The authors argue that these changes will improve the scientific knowledge of stem cell research for those with spinal cord injury. Additionally, including an exit strategy will keep the benefits of early termination, but ensure the safety of patient volunteers.

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¹ Curt, A., Levi, A., Schwab, J.M. (2017). Challenges to Translation and the Hippocratic Oath by Premature Termination of Spinal Cord Stem Cell-Based Trials. *JAMA Neurology*.