Research Project
Funding Opportunity

Cerebral Palsy ALLIANCE RESEARCH FOUNDATION

NEUROPROTECTION AFTER HYPOXIC-ISCHEMIC BRAIN INJURY

Combining human neural stem cells and brain cooling

Lack of blood flow and oxygen to the newborn brain, called "hypoxic-ischemic injury "(HII), remains a devastating and common problem with serious life-long neurological sequelae, including cerebral palsy. The cost to the economy is about US$ 1 million-per-child for life-long medical and rehabilitative care. The indirect costs based on the impact on family dynamics is 2-5-fold more. The latest clinical intervention is brain cooling (BC). We have strong evidence that neural stem cells (NSCs) may augment the benefit of BC Yet, it is not known how to coordinate the administration of these two treatment modalities in a way that enables them to work additively and not antagonistically.

PROJECT BACKGROUND

To establish a rationale structure for NSC clinical trial, we need to determine whether NSCs will antagonize or complement BC given that each modality likely has a different neuroprotective action. We propose to obtain data critical for a successful application to the United States Food & Drug Administration, essential for advancing approval of a clinical trial using human neural stem cells for neuroprotection against acute perinatal hypoxic-ischemic brain injury. In addition, we will establish MRI as the accepted "biomarker" for assessing treatments and outcomes for preinatal brain injury.

RESEARCHER

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FUNDING REQUIRED

$190,000 over 3 years