Brain degeneration and regeneration in preclinical models of Alzheimer's disease

https://neurodegenerationresearch.eu/survey/brain-degeneration-and-regeneration-in-preclinical-models-of-alzheimers-disease/

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Country

Canada

Title of project or programme

Brain degeneration and regeneration in preclinical models of Alzheimer's disease

Source of funding information

CIHR

Total sum awarded (Euro)

€ 637,850

Start date of award

01/07/2014

Total duration of award in years

5.0

The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords
Research Abstract
With aging, the risk to develop Alzheimer's disease increases. Alzheimer's disease is characterized by deficits in brain functions, which seriously affects daily living. Brain cells are deteriorating and their capacity to survive becomes compromised. This degeneration leads to deficits in critical tasks performed by the brain, such as learning and memory. Our research aims to promote general cell health by providing therapeutics that support cell survival and

growth. We propose that these regenerating brain cells will assure adequate cell-to-cell communication and improve learning and memory performances. We propose an innovative treatment that uses magnetic resonance imaging (MRI) and ultrasound technologies to deliver novel therapeutics to targeted areas of the brain. Firstly, brain areas where treatment is required are identified using MRI. Secondly, these selected brain areas are exposed to ultrasounds, through the cranium and without the need for invasive surgery. Thirdly, the therapeutic of interest is injected into the venous system. The effects of ultrasounds on the blood vessels of the brain will allow the therapeutic to leave the blood and enter targeted brain areas, where they are needed to promote cellular survival, repair and regeneration. This non-invasive approach of imaging and ultrasound delivery of regeneration-promoting therapeutics will be tested in preclinical models of Alzheimer's disease. MRI combined with ultrasound applications are also being developed for the treatment of the human brain. This project has the potential to improve the quality of life for people living with Alzheimer's disease and other neurodegenerative disorders in the future.

Lay Summary
Further information available at:

Types:
Investments > €500k

Member States:
Canada

Diseases:
Alzheimer's disease & other dementias

Years:
2016

Database Categories:
N/A

Database Tags:
N/A