

Post-Stroke Brain Deterioration: Role of Abeta and Neuroinflammation

<https://www.neurodegenerationresearch.eu/survey/post-stroke-brain-deterioration-role-of-abeta-and-neuroinflammation/>

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Canada

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Post-Stroke Brain Deterioration: Role of Abeta and Neuroinflammation

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CIHR

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Research Abstract

Unless prevented, one in three over the age of 60 will suffer a stroke, Alzheimer's disease (AD) or both. Some patients who have a stroke develop characteristics seen in an AD brain. If patients have pre-existing AD related pathology, the consequences of stroke are worse. Currently there are few options available to stroke patients that would protect them from developing AD pathology and secondary cognitive decline. To address this, we have created new rat and mouse models of AD and stroke. This proposal will: 1) Carefully reveal the relationship and timing of AD pathology and inflammation following a stroke and how this relates to cognitive impairment; 2) Examine where and how AD pathology occurs following a stroke;

and 3) Target specific inflammatory and AD related molecules to reduce AD pathology and cognitive decline following a stroke. We will use powerful real-time imaging techniques to detect the timing of the developing AD pathology and inflammation following stroke in the live rat. We will look at how AD and stroke together accelerate the deterioration of the brain. By understanding the timing and mechanisms by which AD and stroke interact, we will identify a therapeutic window for treatment. With a window of opportunity identified, we will look at new treatment options that simultaneously block AD pathology and inflammation from occurring. We are only just experiencing the beginning phase of an aging generation. Some patients develop brain changes associated with AD following a stroke. Aging patients with pre-existing signs of AD pathology in the brain may not demonstrate cognitive impairment until after they've had a stroke. This proposal will address both these situations. Results from these proposed projects will provide new treatment options for patients who have suffered a stroke. More importantly, we may provide an explanation as to why some patients suffer from dementia following a stroke, while others do not.

Further information available at:

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