Supervisor & Project Information Form

Please complete and return via email ONLY to gdip.hres@utoronto.ca by

Monday, November 2, 2020

**Supervisor Information**

MUST have unrestricted University of Toronto School of Graduate Studies (SGS) appointment (to independently supervise graduate students)

<table>
<thead>
<tr>
<th>Name: Carmela Tartaglia</th>
<th>Email: <a href="mailto:carmela.tartaglia@uhn.ca">carmela.tartaglia@uhn.ca</a></th>
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<tr>
<td><strong>SGS Department:</strong> IMS</td>
<td><strong>Field of Research:</strong> Biomarkers of neurodegenerative disease (Imaging, biofluids)</td>
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<tr>
<td><strong>Research Institution affiliation (if applicable):</strong> Centre for Research in Neurodegenerative Diseases</td>
<td><strong>Location of Work:</strong> 60 Leonard Ave 6th floor</td>
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<td><strong>Student contact time (number of hours per week YOU are available to the student for any concerns or to review progress):</strong> 7</td>
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Project Information (will be posted on GDipHR website for student access)

TITLE: The effect of falls on patients with neurodegenerative diseases

DESCRIPTION (MAX 500 WORDS):
There is increasing evidence that concussion can have cognitive, mood and physical effects and in 10-15% the effects can be persisting. Recently traumatic brain injury (TBI) has been listed as a risk factor for dementia. It remains unknown what effect concussion has on patients who already have a neurodegenerative disease. Falls are one of the most common causes of concussion. Patients with neurodegenerative diseases and cerebrovascular disease are at high risk of falls. The risk of falls is increased in patients with Parkinson’s Disease (PD) and are a major source of morbidity and disability in PD. In PD, patients with a history of post-acute mild to moderate TBI show greater decline in cognitive functioning over time compared to those without a history of TBI, despite similar demographic, disease severity, motor and mood profiles at baseline, as well as comparable changes in medications, mood, and motor symptoms over time. There is much less data in all the other neurodegenerative diseases, especially in those with progressive supranuclear palsy, corticobasal syndrome and amyotrophic lateral sclerosis (ALS) where falls are prevalent. Falls are also prevalent in Alzheimer’s Disease (AD) and stroke. The impact that falls have on disease progression remains unknown.

The aim of this study is to evaluate the effect of falls on cognition, mood and motor function in those with neurodegenerative disease after a fall. Data from patients recruited to a longitudinal study on neurodegenerative disease including AD, PD, ALS, frontotemporal dementia (FTD) and Vascular disease will be analyzed so to assess the outcome after a fall. Patients with falls will be compared to patients without falls with respect to change in cognition, mood and motor function. We hypothesize that patients with falls will show a sharper decline in cognition, mood and motor function than those without falls.

Aim 1: Determine the change in cognition (composite score of memory, executive function, language and visuospatial function), mood (depression scale) and motor function (UPDRS) as measured by various scales in patients who had falls compared to patients without falls.

Aim 2: Evaluate the relationship of falls to changes on MRI that measure microhemorrhages and siderosis, that can be seen after falls.
If human subjects are involved, have the appropriate Research Ethics Board approvals been obtained?

☒ Yes  ☐ No  ☐ Application Submitted (Date: ________________)

Do you expect this work will be published within the 20 months?

☐ Yes  ☐ No  ☒ Uncertain / Other

**Student Roles & Responsibilities (please be as specific as possible)**

Help in data collection and data analysis. Will be taught to look for microhemorrhages and siderosis on MRI.

*Indicate who will serve as the student’s direct report for daily oversight (PI, PhD student, technician, etc...)* A fellow in my lab will serve as mentor and provide training for evaluation of data.
Indicate to what extent the student’s research activities could, if necessary, be completed remotely. Much of the study can be done remotely. The data has already been collected. The data analysis can be done remotely but the MRIs may need to be evaluated on location but there may be a way to do remotely also.