MS-like conditions are not fully understood. Here, we have used direct in vitro systems and cuprizone induced demyelination in PDGFRα-Cre reporter mice to investigate the role of these pathways in regulating OPC maturation, oligodendrogenesis and remyelination in chronic demyelinating lesions. Our direct in vitrodata show that mTOR inhibition with rapamycin impedes OPC proliferation and maturation and reduces morphological complexity of oligodendrocytes and normal expression of myelin basic protein, which has a major role in myelination. We also identified a significant reduction in OPC proliferation after tunicamycin-induction of the UPR, and a decline in OPC differentiation into mature oligodendrocytes and reduced oligodendrocyte arborization. We are currently investigating these pathways in chronic demyelinating lesions of the cuprizone mice. These findings are an interesting starting point for elucidating the role of mTOR and UPR pathways in regulating oligodendrocytes and remyelination in chronic progressive MS.

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Profiling cognitive-motor interference in cognitively impaired persons with progressive multiple sclerosis

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Introduction: Performing cognitive-motor dual tasks (DT) may result in reduced walking speed and cognitive performance in persons with Multiple Sclerosis (MS) and the effect in persons with progressive MS having cognitive dysfunction is unknown.
Objectives: To profile DT performance during walking in cognitively impaired persons with progressive MS and examine DT performance by disability level.
Methods: Secondary analyses were conducted on baseline data of the CogEX study. Participants, enrolled with SDMT⩽1.282 SD below normal, performed a single cognitive task (alternating alphabet), single motor task (walking) and a DT (both). Outcomes were walking speed, number of correct answers on the alternating alphabet task, and the DT cost on walking (DTC_{motor}) and cognitive ($DTC_{cognitive}$) performance. Outcomes were given overall and given and compared by EDSS (<6 vs. ⩾6). Spearman correlations were conducted between the DTC_{motor} with clinical measures and patient reported outcomes.
Results: Overall, participants (n=303, EDSS: 6.0, 4.5-6.5) walked slower and had fewer correct answers on the DT versus ST (both $p<0.001$), with a DTC_{motor} of 15.7% and $DTC_{cognitive}$ of 2.3%. Participants with lower EDSS walked faster than those with higher EDSS ($p<0.001$), but did not differ on cognitive performance or DTCs.
Conclusions: DT affects walking and cognitive performance in cognitively impaired persons with progressive MS. This interference did not differ by overall disability level.

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SPMS diagnosis: a Canadian practice audit

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Introduction: An estimated 50% of relapsing-remitting multiple sclerosis (RRMS) patients develop secondary-progressive disease (SPMS) within 15-20 years of MS onset; average age at onset is 45 years (Tremlett 2008,Tutuncu 2013). The lack of consensus on diagnostic criteria contributes to clinician uncertainty and a considerable diagnostic delay (Katz Sand 2014).
Objectives: To examine the clinical characteristics of potentially transitioning RRMS and SPMS populations in the Canadian practice setting.
Methods: A retrospective chart review was completed in Canadian MS specialized centres and community neurology practices of MS patients with EDSS 3.0-6.5 who received an RRMS diagnosis 10-20 years ago.
Results: Data were collected for 708 patients at 15 centres (59% from 10 MS clinics, 41% from 6 community practices). A majority were aged >50 years (58%). The average duration of MS was 15.2 years (range 13.3-17.1 years). The SPMS group (n=223) was older (76% aged >50 years vs. 49%), had a higher current