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Structural integrity of the nucleus basalis of meynert in Parkinson's Disease related cognitive and gait decline

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Background: In Parkinson's disease (PD), mounting evidence implicates degeneration of cholinergic systems in cognitive and gait decline. The Nucleus Basalis of Meynert (NBM) is a major cholinergic nucleus with widespread cortical projections. We hypothesized that atrophy of the NBM is correlated with cognitive phenotypes and gait measures in PD. Methods: Subjects from the COMPASS-ND study (20 controls and 79 PD patients) were studied. Clinical measures included cognitive diagnosis (MCI, dementia) and quantitative gait parameters with dual task gait. Manual region of interest measurement of the NBM was performed on T1 MRI scans. NBM volumes were analyzed against clinical measures. Results: PD-MCI and PD-dementia patients had greater dual task costs to gait speed when performing serial 7s (mean difference -12%, p=0.02; -11%, p=0.04) and animal fluency tasks (mean difference -9%, p=0.02; -15%, p<.001) compared to controls. Reduced normalized NBM volume was associated with PD-MCI (mean difference 0.34, p=0.04) and PD-dementia (mean difference 0.55, p<0.001) phenotypes. NBM volume was weakly correlated with gait velocity (r^2 0.06, p=0.01) and dual task cost to gait velocity with animal fluency (r^2 0.06, p=0.02). Conclusions: NBM atrophy is associated with cognitive decline in PD and may be responsible for cognitive aspects of gait performance.

P.004

Comparison of the Montreal Cognitive Assessment (MoCA) and Rowland Universal Dementia Assessment Scale (RUDAS) for identification of mild cognitive impairment and dementia

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Background: There are many cognitive tests that detect mild cognitive impairment (MCI) and dementia such as the Montreal Cognitive Assessment (MoCA) and Rowland Universal Dementia Assessment Scale (RUDAS). The comparative performance of these screening tests for identifying MCI and dementia is unknown. Methods: The MoCA and RUDAS were administered during baseline visits for patients in the Calgary Neurosciences Program. Those that enrolled in the Prospective Registry of Persons with Memory Symptoms (PROMPT) had their scores related to their final clinical diagnosis. Cut-off scores of 26 for the MoCA and 22 for the RUDAS were used to indicate a positive result. The sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and accuracy of both cognitive scores were compared. Results: The sensitivity, specificity, PPV, NPV, and accuracy of the MoCA (n = 125) was 89.3%, 72.7%, 93.9%, 59.3%, and 86.4%, respectively. The sensitivity, specificity, PPV, NPV, and accuracy of the RUDAS (n = 125) was 47.6%, 100%, 100%, 29.0%, 56.8%, respectively. Conclusions: In patients with cognitive complaints presenting to a specialist clinic, the MoCA was more sensitive and accurate than the RUDAS for a final clinician diagnosis of mild cognitive impairment or dementia when using the standard cut-offs.

P.005

A virtual interdisciplinary diagnostic memory clinic: rural patient and caregiver satisfaction

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Background: Saskatchewan's Rural and Remote Memory Clinic (RRMC) has provided *post-diagnostic* virtual dementia care for approximately 19 years. In response to the COVID-19 pandemic and a new need for remote dementia *diagnosis*, we developed a virtual, team-based, interdisciplinary (neurology, neuropsychology, nursing), diagnostic memory clinic (vRRMC). We evaluated patient and caregiver satisfaction with the new virtual clinic. Methods: Semi-structured telephone interviews were conducted with rural vRRMC patients (n=7), caregivers (n= 13), and one patient/caregiver dyad. Ages of respondents ranged from 40 to 70 years old (60% female). Level of diagnosed cognitive dysfunction ranged from subjective cognitive impairment to major neurocognitive disorder. Respondents saved an average of 460 km of travel compared to a trip to Saskatoon. Results: Thematic analysis of responses revealed universal satisfaction with the virtual model. The technology training sessions, offered prior to the first vRRMC visit, was described as important for satisfaction. Analysis of preference for future visits revealed more nuance; some preferred in-person visits and planned to travel for future appointments post-pandemic, while others preferred to maintain the virtual model due to perceived travel burden (cost, time, and inconvenience). Conclusions: When clinically appropriate, virtual diagnostic memory clinics should persist as an option post pandemic for families who experience high travel burden.

P.006

Alzheimer's disease CSF biomarker testing and its impacts on clinical management: findings from the IMPACT-AD BC study

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Background: Within the IMPACT-AD BC study, we sought to address the gap in knowledge around how the use of