reducing delays in recognition and treatment of acute dystonia, limiting variation in management, and decreasing progression to SD. A survey was administered to providers assessing knowledge and comfort post-implementation. Results: There has been high usability with 58% (18/31) of providers surveyed having used the pathway at least once. Provider comfort has improved, with 89% (25/28) of respondents reporting increased comfort managing SD due to the clarity of the pathway and stepwise directions. Conclusions: The pathway fills a gap in the in-hospital management of dystonia and has led to increased provider comfort.

Clinical Neurophysiology (CSCN)

D.1

Feasibility and impact of palliative care at any stage of amyotrophic lateral sclerosis

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Background: Although palliative care (PC) is recommended for patients with amyotrophic lateral sclerosis (ALS), many patients receive PC very late or not at all. Our study goals included 1) determing the feasibility of early PC 2) describing patient/caregiver satisfaction with early PC and 3) measuring the impact of early PC on quality of life (QOL) and mood. Methods: Patients followed at the multidisciplinary ALS clinic in Ottawa, Canada and their caregivers were eligible for the study irrespective of duration or severity of disease. All participants completed questionnaires tracking QOL and mood and all were offered a palliative care consultation. Participants completed a satisfaction survey post-PC consultation. Results: 32 patients and 20 caregivers received a PC consultation, conducted virtually. All of them found the consult beneficial and none of the patients reported preferring the consultation later in their illness. The PC consultations were most highly rated by patients with high levels of anxiety and worse bulbar function, and by caregivers of patients with low function. There was no statistically significant change in mood or QOL compared to the 7 participants who declined PC consultation. Conclusions: PC consultations are feasible and beneficial at all stages of illness. Patients with anxiety and bulbar dysfunction may benefit most.

D.2

Cross-sectional axonal excitability and motor unit number index profile in early stages of weakness in ALS

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Background: What is the number and size of motor units, and axonal excitability profile in the early stages of muscle weakness in ALS compared to controls? Methods: We enrolled ALS patients with APB manual strength testing rated four or four-minus (ALS:4-arm) and four-plus (ALS:4+ arm) and control participants >35 years-old from the University of Toronto, University of Alberta and Universidade Federal de Sao Paulo. Mean±SD, one-way ANOVA and ANCOVA of ALSFRS-R, PUMN Score, MUNIX, MUSIX, and nerve-excitability testing using QTRAC TROND protocol were reported. Results: Twenty-five ALS patients and 63 controls were included. Mean MUNIX was significantly lower ($p<0.0001$) and MUSIX was significantly higher ($p<0.001$) in both ALS groups compared to controls. Mean strength-duration time constant in the ALS:4-arm (0.50ms±0.11; $p<0.05$) and superexcitability in both ALS groups (ALS:4- -29.05%±9.24, ALS:4+ -27.67%±8.03; $p<0.05$) were relatively increased, supporting axonal hyperexcitability. Conclusions: Significant motor unit loss measured by MUNIX is already present at the earliest detection of muscle weakness in ALS. Increased MUSIX and altered axonal physiology are associated with axonal sprouting and geometry change(1), along with ion channel dysfunction(2). Future trials targeting muscle weakness in ALS should consider the altered neuronal physiology during early disease stages and utilize neurophysiological biomarkers only in normal-to-mildly weak muscles.

D.3

Peripheral nerve injuries related to walking aid use: a systematic review

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Background: Walking aids such as crutches, canes and walkers are used by 2 million Canadians. Repetitive weight-bearing with walking aids may cause upper limb peripheral nerve injury. The objectives of this review were to: 1) identify types of nerve injuries reported with walking aids; 2) report electrodiagnostic findings; 3) identify typical treatment strategies; and 4) determine expected recovery time for such injuries. Methods: MEDLINE, EMBASE, CINAHL and Cochrane Library were searched for primary data in English published between 1950-2022. Abstracts were reviewed independently by 2 authors. Full-text reviews were independently conducted by 2 authors. Results: The search identified 3746 abstracts, 43 of which underwent full-text review. 31 studies were included. There were 144 cases of peripheral nerve injury. Crutches caused the most injuries (n=21 studies). The ulnar nerve was most commonly injured (n=27 cases). Improper walking aid fit was identified as a risk factor in 74% of cases. Stopping walking aid use was the most common treatment strategy (n=10 studies). Follow-up reports (n=20) indicated 65% of patients experienced recovery at 6 months. Conclusions: Improper walking aid fit and use were identified as major injury risk factors. A national program to teach patients and clinicians how to use walking aids may reduce injury risk.