A LONGITUDINAL STUDY OF PATIENTS WITH CHRONIC INFLAMMATORY DEMYELINATING POLYNEUROPATHY (CIDP): IDENTIFYING ULTRASONOGRAPHIC FEATURES FOR PROGNOSIS

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Background: Diagnosis and treatment monitoring in CIDP is primarily based on clinical parameters. High-frequency ultrasound reflects nerve pathophysiology non-invasively and painlessly, and has been demonstrated as a useful additional diagnostic tool in CIDP. However, correlations with disease state and response to treatment have been mixed. This prospective 12-month study aimed to identify potentially useful prognostic and treatment-related biomarkers utilising neuromuscular ultrasound.

Methods: We recruited 35 patients with CIDP and other immune-mediated neuropathies who were currently or about to commence treatment. 32 participants completed 12 months of follow-up, with standardised clinical and ultrasonographic assessment at baseline, 3- and 12 months. Our protocol included bilateral, whole-length assessment of the median and ulnar nerves, with unilateral assessment of other nerves, measuring cross-sectional area (CSA), echogenicity, vascularity and morphological findings.

Results: As with our previous retrospective and cross-sectional studies, nerve size variability was demonstrated in nearly all CIDP participants, particularly nerve enlargements in proximal upper limb nerves. However, nerve size parameters correlated poorly with clinical state or change over time. By contrast, other morphological findings, including changes in echogenicity and fascicular appearance, demonstrated suggestive correlations with remaining stable on weaning treatment, as well as in participants who demonstrated clinical improvement. The most promising parameters will be presented.

Conclusions: This longitudinal study of neuromuscular ultrasound in patients with CIDP identified morphological findings – particularly based on echogenicity and fascicular appearance rather than CSA measurement – that may have potential as biomarkers in identifying treatment-responsive patients, along with those who may have ‘burnt out’ disease.