neuropathy is a recognized part of FM, surprisingly little is known about large fibre neuropathy. The present study investigates the sensory and motor axonal properties using novel nerve excitability testing (NET) to seek a better understanding of the pathogenesis of this painful disorder.

Methods 25 FM patients were recruited from the Wan Fang Hospital in Taiwan who fulfilled the American College of Rheumatology diagnostic criteria.¹ NCS, pain scores, blood tests and NET were performed in all patients and patients with factors that may confound the results of NET were excluded. Control data were obtained from age and gender-matched healthy controls (HC) who had no neurological deficits or known pain disorders.

Results The FM group showed an increase in superexcitability ($p<0.05$), subexcitability ($p<0.05$) and over-shoot during hyperpolarizing threshold electrotonus ($p<0.05$) in the sensory excitability profiles in contrast to HC. However, motor nerve excitability profiles showed no significant difference.

Conclusions Alterations in the sensory axonal parameters can be detected while NCS is normal, these findings are compatible with the concept that the sensory system is mainly involved in the pathogenesis of FM. Results implied probable hypofunction of the paranodal fast K⁺ channel in the sensory axons, known to be associated with the generation of pain.² Our study highlights the advantage of NET over NCS, in the early detection of axonal dysfunction and may provide further understandings of future therapeutic treatment.

REFERENCES

1. Wolfe F, Clauw DJ, Fitzcharles MA, Goldenberg DL, Hauser W, Katz RS, Mease P, Russell AS, Russell IJ, Winfield JB. Fibromyalgia criteria and severity scales for clinical and epidemiological studies: a modification of the ACR Preliminary Diagnostic Criteria for Fibromyalgia. *J Rheumatol* 2011;**38**(6):1113–1122.
2. Kuwabara S, Misawa S. Pharmacologic intervention in axonal excitability: in vivo assessment of nodal persistent sodium currents in human neuropathies. *Curr Mol Pharmacol* 2008;**1**(1):61–67.

117

EMPLOYMENT-ACTIVITY STATUS AND MULTIDISCIPLINARY CARE ENGAGEMENT IN PATIENTS WITH NEWLY DIAGNOSED DEMENTIA: A 16-MONTH AUDIT STUDY WITHIN AN INNER SYDNEY COMMUNITY NEUROLOGY CLINIC

¹Louise Rigney, ²Alexis Selby, ³Lily Chen, ⁴Tejas Patel, ⁵Yun T Hwang, ³Anthony ED Mobbs, ^{3,6,7}Rowena EA Mobbs*. ¹Department of Neurology, Campbelltown Hospital, Campbelltown, NNSW, Australia; ²Department of Neurology, Northern Beaches Hospital, Frenchs Forest, NSW, Australia; ³Sydney Cognitive, North Sydney, NSW, Australia; ⁴Department of Neurology, Bankstown Hospital, Bankstown, NSW, Australia; ⁵Brain and Mind Centre, University of Sydney, Camperdown, NSW, Australia; ⁶University of Sydney, Camperdown, NSW, Australia; ⁷Macquarie University, Macquarie, NSW, Australia

10.1136/jnnp-2019-anzan.104

Introduction Dementia is one of the leading causes of mortality and morbidity in Australia. Attitudes towards dementia in the workplace, tailored adjustments for disability, and patient-centred 'exit with dignity' strategies are of objective and subjective importance to patient wellbeing. This study aimed to assess employment characteristics in those with newly diagnosed dementia, and engagement with multidisciplinary supports.

Methods An audit of patients with diagnosis of dementia ($n=136$, age 51–96 yrs, M:F 1.1:1) and mild cognitive

impairment (MCI) ($n=28$, age 56–83 M:F 0.6:1) over a 16 month period in 2017–18 was performed using online server data collection and retrospective analysis of general and employment demographic characteristics, presenting clinical information, and care across clinical psychology, psychotherapy, occupational therapy, speech pathology, and dietetics.

Results Younger onset dementia was present in 14(10%). Of the 122 dementia cases aged above 65 years, 24(20%) were employed-active, 98(80%) were retired, and none were unemployed. Approximately 5% had a background in healthcare. Allied health support was provided in 106 cases (78%) with ≥ 3 supports in 28(21%) and was more common in those who were retired(76%) versus employed-active (21%). Clinical psychology or psychotherapy support was provided in 50 (37%) cases of dementia.

Conclusions The onset of dementia often co-exists with active employment. Community perception of employment status in dementia would be of future research interest. Provision of multidisciplinary allied health supports in dementia may facilitate coping, adjustment and cooperative strategies for exit with dignity but further studies are required in this cohort.

118

CASE SERIES: SUBACUTE COMBINED DEGENERATION OF THE SPINAL CORD IN VITAMIN B12-REPLETE RECREATIONAL NITROUS OXIDE ABUSERS

¹Chris Blair*, ²Chris Tremonti, ¹Leon Edwards, ²Paul Haber, ³Michael Halmagyi. ¹Department of Neurology, Liverpool Hospital, Sydney, NSW, Australia; ²Department of Drug Health, Royal Prince Alfred Hospital, Sydney, NSW, Australia; ³Department of Neurology, Royal Prince Alfred Hospital, Sydney, NSW, Australia

10.1136/jnnp-2019-anzan.105

Introduction Within a few years of its discovery in late 18th century, nitrous oxide was being used recreationally for its pleasurable effects. It remains in widespread use as an inhaled stimulant today, and can be legally acquired in bulk quantities with relative ease. In the body prolonged exposure to nitrous oxide leads to the oxidization of vitamin B12, rendering it unusable in key enzymatic reactions necessary for myelin synthesis. Over time this qualitative deficiency leads to a central demyelination syndrome that characteristically develops despite normal serum vitamin B12 levels and, with continued exposure to nitrous oxide, resists treatment with vitamin B12 supplementation.

Method Nitrous oxide abusers presenting with a central demyelination syndrome were enrolled in this case series. Serum levels of vitamin B12, active B12, folate and homocysteine were measured. Nitrous oxide exposure was discontinued, and all patients were treated in accordance with evidence-based guidelines.

Results Eight patients presented with predominantly moderate-to-severe clinical deficits. The majority were vitamin B12 replete. In most cases individuals had actively engaged in prolonged vitamin B12 supplementation in an attempt to circumvent the harmful pathophysiology, of which they were loosely aware. Following treatment and rehabilitation several patients were discharged into full-time care, and most had significant residual disability at follow-up.

Conclusions This case series not only illustrates the tragic consequences of abuse of this widely available and legally procured stimulant, but also highlights the futility of