Title: Electrodiagnostic tests are unlikely to change management in those with a known cause of typical distal symmetric polyneuropathy

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We confirm that we have read the Journal's position on issues involved in ethical publication and affirm that this report is consistent with those guidelines

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We read with interest the Issues and Opinions article by Bodofsky et al. summarizing the existing evidence and concluding that "the majority of patients who present with new symptoms and signs suggestive of distal symmetric polyneuropathy (DSP) should undergo electrodiagnostic (EDx) testing."[1] However, we interpret the same evidence differently. The authors cite four supporting studies and one conflicting study by our group.[2-6] One of the supporting studies included patients with symptoms or signs of chronic polyneuropathy evaluated at an academic medical center.[6] Rosenberg et al. found that 90 of 172 (52%) EDx evaluations contributed to the diagnosis in the entire population although they did not evaluate how often management changes occurred. However, they also found that 69 of 73 (95%) EDx evaluations of patients with polyneuropathy of known cause were considered unnecessary, leading them to conclude: "In patients with signs and symptoms of a DSP with duration of more than 6 weeks and a known cause", "confirmation of peripheral neuropathy by neurophysiological studies is unnecessary." Furthermore, two of the other cited studies, while concluding that EDx testing often changes management amongst all tertiary electrodiagnostic referrals, contained small numbers of suspected polyneuropathy patients (16% and 21% respectively), limiting inferences of the benefits of EDx testing in polyneuropathy.[4, 5] Of note, no standard definition of polyneuropathy was used and referring physicians included all provider types. In the last study, Cho et al. included 44 patients evaluated at a tertiary EDx laboratory who had a referral diagnosis of DSP and paresthesias, dysesthesias, or pain in both feet.[3] Excluding 8 patients with motor predominant symptoms, a red flag indicating an atypical neuropathy, 33% of EDx evaluations led to a management change. While this small study supports Bodofsky et al's conclusion, it has important limitations: tertiary setting, lack of a standardized DSP definition, and limited detail of management changes. In contrast, our population-based study[2] included 458 patients seen by

community neurologists in Texas and meeting the Toronto consensus definition of probable DSP. We found that EDx testing changed the etiology and/or management in 2 of 366 patients (0.5%), and we provided detailed management changes for all patients.

Evaluating the evidence, we conclude that the benefit of EDx testing is low in patients with DSP of known cause based on two studies that evaluated this clinical scenario.[2, 6] Both studies conclude that EDx testing should not be routinely performed in this population. Importantly, these two studies were the largest and used the most precise case definitions. What remains unknown is which clinical factors should prompt EDx testing in patients with DSP. We have proposed that asymmetry, non-length dependence, motor predominance, and acute/subacute onset are likely important clinical factors. To move our field forward we need higher quality evidence — a prospective, adequately powered, multi-site study including community and academic settings, using precise inclusion criteria and documenting potential clinical factors that may indicate the need for EDx testing. Funding high quality studies to define the precise role of EDx testing in DSP should be a priority.

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