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Predictive Markers for Spasticity Management: Integrating Clinical, Electrodiagnostic, and Surgical Approaches

Topic: Integrative Medicine

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BACKGROUND

Intractable spasticity is considered as one of the most worldwide distributed disabling condition.

Evaluation of the different electrodiagnostic (EDX) methods used in assessment of intractable spasticity in order to select the best objective and prognostic parameters to be used; and evaluation of different current modalities involved in treatment.

METHODS

A prospective open-label study; 57 adult patients were included. They underwent pre- and post-functional assessment and EDX assessment (Fmax/Mmax, Hmax/Mmax ratios, measuring agonist-antagonist co-contraction, spontaneous motor unit firing rate, and voluntary activity). Patients were divided according to the clinical assessment of spasticity severity into four groups: Group 1, 27 patients for botulinum toxin injection; Group 2, 12 patients for selective neurotomy; Group 3, 5 patients for dorsal root entry zone lesioning; and Group 4, 13 patients in a multimodality group. Intraoperative monitoring was used in all neurosurgical procedures. Patients had a minimum of six months follow up.

RESULTS

In Groups 1 and 2, pain and spasm were reduced at the first month, and improvement in disability score occurred at six months. In Group 3 there was no change in disability score over one year follow-up period; patients had the same degree of dependence but care was given with more ease.

CONCLUSION

Electrodiagnostic offers an easy and valid objective method for evaluating the severity of spasticity. Botulinum toxin type-A gave good results, provided that spasticity is focal and moderate (Hmax/Mmax < 0.5). Selective peripheral neurotomy showed the best results in this study in both physical and functional outcomes

Statement of Disclosures

None

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