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Editorial

Guide the EMG lines

See Article, pages 1688–1729

A group of well-recognized experts in clinical neurophysiology led by Professor Erik Stålberg organized a new edition of the "Standards for Quantification of EMG and Neurography" (in this issue of *Clinical Neurophysiology*, Stålberg et al., 2019). This is an updated and extended version of the previous document published in 1999, and was prepared under the support and endorsement of the International Federation of Clinical Neurophysiology (IFCN). It does not include Single Fiber EMG, or technical issues such as equipment features or artefacts, since both are topics of separate IFCN-endorsed documents to be published in the near future. The work by Stålberg et al. represents guidelines about how to perform and interpret a number of routine techniques, in particular it covers needle and surface EMG, electrical impedance myography, motor and sensory neurography, F-wave recordings, H-reflex, short segment recordings, CMAP scan and motor unit number methods.

Good medical guidelines should be supported on a systematic review of the literature, be derived from an unbiased multidisciplinary group of experts and, if possible, provide strengths of recommendation supported by high-quality evidence-based data (Murad, 2017). Guidelines intend to improve healthcare quality, by supporting clinicians in performing techniques or making decisions (Woolf et al., 1999). Guidelines in Medicine typically progress from a consensus of expert panel, to evidence-based documents (levels of evidence), later incorporating GRADE (Grading of Recommendations. Assessment, Development and Evaluation) for weighting quality of the evidence (Goldet and Howick, 2013) and more recently combining patients' contribution to ensure meaningful recommendations (Domecq et al., 2014). To overcome a number of difficulties in writing guidelines, in particular caused by experts with scientific (personal beliefs) or economic conflicts of interest, it has been proposed to include a sufficient number of methodologists or other experts without conflicts of interest in the development of guidelines (Hirsh and Guyatt, 2009).

Guidelines in Medicine, as the ones on medical techniques, are important in medical malpractice litigation, since they can be used as a defense by the accused physician (Mackey and Liang, 2011). In addition, they can promote better health care by stimulating payers to improve quality of the services and giving more time for caring patients (Woolf et al., 1999). However, guidelines can limit physician autonomy and can be used for accusing physicians who allegedly did not respect the standard of care.

Guidelines should be adopted and adapted (Murad, 2017), outdated guidelines perpetuate past practices. In everyday life, non-adherence to recommendations tends to be highly prevalent in medicine (Natsch et al., 2003). It seems that evidence-based guidelines are more frequently implemented in comparison to non-evidence-based ones. In addition, applicability, relevance, compatibility with previous consensus, and simplicity favor adherence (Grol et al., 1998). Updating guidelines is a difficult task, and there is no rule for defining the exact time for it. *Living guidelines* with a permanent channel to update the document are feasible but not easy to implement (Siemieniuk et al., 2016).

In summary, the main benefit of the guidelines is to improve quality of care of patients (Murad, 2017). We are convinced the current guidelines are relevant for this. Evidence-based recommendations are not available for most areas of Clinical Neurophysiology, but well controlled studies with blinded raters exist for several topics that provide a moderate level of evidence (Johnsen et al., 2019). In addition, other approaches have been used, such as recommendations supported by consensus on individual investigations and using a gold-standard for final diagnosis (Tankisi et al., 2005).

It is not possible to refute that the current guidelines (Stålberg et al., 2019) are influenced by the clinical experience, opinions and composition of the expert panel. Nonetheless, this new set of "Standards for Quantification of EMG and Neurography" represents a great effort from a respected group of experts and permit sufficient room for individualized application in order to respect patientś needs. Guidelines from respected scientific societies have an increased chance of good adherence (Natsch and Van Der Meer, 2003). In this case, as these guidelines are supported by the much respected IFCN, we can be sure of a rapid and universal implementation of these "Standards for Quantification of EMG and Neurography".

Declaration of Competing Interest

The authors report no conflict of interests.

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