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Letter to the Editor

New perspectives on somatosensory evoked potentials. Comment: SSEP amplitudes add information for prognostication in postanoxic coma



To the Editor

Always looking for Clinical Neurophysiology articles, one in particular¹ has attracted a lot of attention because the results are interesting, addressing a topic of clinical relevance in a multidisciplinary interface such as the SSEP amplitudes add information for prognostication in postanoxic coma.

We think the article offers a good opportunity for resident physicians and specialists, to review neurophysiological features, and mainly to publicize and discuss the role of the somatosensory evoked potential (SSEP) in neurology.

The authors conclude that very low cortical SSEP amplitudes are predictive of poor outcome in patients after cardiac arrest. Combining bilaterally absent N20 and very low SSEP amplitude increases sensitivity substantially.¹

Others authors raise the hypothesis that the P25/30 has a radially oriented generator and is less influenced by the electrode position and could decrease false positive results when compared to focusing on the amplitude of the N20 alone.²

We partially agree with this statement, we think that the more neurophysiological elements to evaluate, the better it will be, and this is what makes the assessment of multimodal evoked potentials, SSEP and auditory evoked potentials, more specific in cases of altered consciousness.^{2,3}

The evoked potentials of short latency are, in general, useful for evaluating patients in a coma, because they do not change in metabolic and pharmacological states. The absence of cortical responses (N20) bilaterally is a reliable sign of a poor prognosis. Patients who present unilateral preservation of these responses may show functional recovery. Meta-analyses of the bilateral absence of cortical N20 responses, recorded after 72 h, can predict death or the persistent vegetative state with a specificity of 99% in anoxic–ischaemic and around 95% in traumatic coma.⁴

SSEPs are assessed as normal, abnormal (increased latency or reduced amplitude), or absent on each side. When bilaterally absent or alternatively normal following trauma, SSEPs may help detect

patients with poor or good prognosis. For example, normal SSEPs after trauma are associated with a 57% chance of good recovery, whereas bilaterally absent SSEPs are associated with only a 1% chance of functional recovery. In addition, repeated SSEP measures may also help detect patients with brainstem herniation due to interruption of these functional connections, or with cerebral ischemia correlating with jugular bulb evidence of reduced oxygen content. Changes in median SSEP may precede the rise of intracranial pressure 30% of the time.⁴ Basis about the origins of SSEP, consider criteria that must be met to establish a causal relationship between activity in a neural structure and a scalp-recorded potential.

We thank the authors for the excellent article that gave us the opportunity to address relevant aspects in the field of clinical neurophysiology.

Conflict of interest

There is no conflict of interest to declare.

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