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Letter to the Editor

Before Recommending Sugamadex for Reversal of Rocuronium, all Determinants of MEP Morphology must be Considered

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Letter to the Editor

We reviewed the article by Suresh *et al*. on a double-blind, randomized, controlled study comparing the effects of rocuronium reversed with sugamadex (group A) or cisatracurium (group B) on the amplitude and recovery characteristics of transcranially evoked magnetic potentials (tMEP) during thoracic or lumbar spine surgery with interest [4]. Group B showed higher MEP amplitude and shorter MEP latency compared to group A [4]. Train-of-four recovery (TOF) was faster in group B compared to the control group, and propofol dosage was higher in group B than in the control group [4]. It was concluded that sugamadex facilitates the reversal of rocuronium effects, as evidenced by MEP responses, compared to cisatracurium [4]. The study is interesting, but some points should be discussed.

The first point is that patients did not undergo nerve conduction studies (NCS) prior to inclusion in the study to rule out peripheral nerve neuropathy [4]. A normal clinical examination of motor and sensory functions does not rule out subclinical neuropathy. Since motor neuropathy strongly influences the morphology of MEP potentials, it is crucial that peripheral neuropathies are ruled out in order to avoid misinterpreting the MEP results.

The second point is that the indication for spinal surgery was not specified [4]. Since impairment of anterior horn cells and motor roots can significantly affect the morphology and latency of MEPs [3], it is crucial to know how many of the included patients suffered from neuronopathy, radiculopathy, or plexopathy.

The third point is that current medications were not included in the analysis [4]. Since, for example, propofol and benzodiazepines reduce MEP amplitude and prolong MEP latency, and ketamine, for example, increases MEP amplitude and shortens MEP latency [1], it is essential to know whether abnormal MEPs are due to side effects of the drugs and not to the effect of the muscle relaxants.

The fourth point is that comorbidities were not sufficiently included in the analysis [4]. Only patients with a body mass index > 35, epilepsy, focal infection at the stimulation site, and anemia were excluded. Since MEPs can also be abnormal in patients with multiple sclerosis, stroke, Parkinson's disease, and spinal cord disorders [2], it is crucial that not only peripheral nervous system disorders but also central nervous system disorders are thoroughly excluded in each of the included patients.

Overall, before recommending sugamadex to reverse rocuronium-induced muscle relaxation, as assessed by tMEPs, all factors influencing the morphology and latency of MEPs must be taken into account in the analysis.

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