Reversal of Neuromuscular Blockade by Sugammadex for Stimulator-Guided Nerve Blocks After Tracheal Intubation: Is It Necessary?

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To the Editor,

We read the article by Dr. Moriwaki et al.1 with great interest in a recent issue of the journal. To facilitate early recovery of neuromuscular function for stimulator-guided nerve blocks, the authors administered sugammadex 2 mg/kg 10 minutes after rocuronium 0.6 mg/kg to obtain adequate responses from nerve stimulation.1 While their protocol is feasible and their results are satisfactory, we have concerns about the strategy.

Sugammadex might be a game-changer in the practice of general anesthesia. It can reverse any depths of rocuronium-induced neuromuscular blockade within minutes and notably without cholinergic adverse effects.2 Nonetheless, anesthesiologists should be reminded that any drug is poison without considering why (indication), when (timing), and how (dose).

First, for patients who desired general anesthesia and peripheral nerve block for pain control, we argue that using a supraglottic airway device without muscle relaxant during moderate-to-deep sedation or general anesthesia is sufficient to perform stimulator-guided nerve block. Even for long-hour procedures requiring a definite airway, general anesthesia with tracheal intubation can be performed after peripheral nerve blocks (block-before-intubation strategy).

Second, the optimal depth of neuromuscular block without interfering with the use of a stimulator to guide nerve blocks is controversial. We did not know the specific depth of neuromuscular blockade 10 minutes after they gave rocuronium 0.6 mg/kg from their article. However, we found that all patients made a full recovery of neuromuscular function 7 minutes after sugammadex 2 mg/kg with a train-of-four (TOF) ratio above 0.9 as shown in Figure 2 of the article done by Moriwaki et al.1 Unsurprisingly, many patients (72%) presented coughing and movement during surgery, most likely resulting from inadequate neuromuscular blockade hereafter. Anesthesiologists should be reminded that recommended doses of sugammadex from the package insert are relatively high for rapid and full reversal within 2–3 minutes in life-threatening scenarios.2 An excessive dose of sugammadex is not binding any rocuronium in the body. An unnecessary dose of sugammadex is associated with increasing drug cost and the occurrence of bradycardia and hypersensitivity reactions.3,4 Re-obtaining neuromuscular blockade after a high dose of sugammadex is another concern because rocuronium is not an option for muscle relaxation in the following hours. Therefore, it may be considered that anesthesiologists gave a low dose of sugammadex with TOF monitor to a targeted depth of neuromuscular blockade in such cases, instead of full recovery of neuromuscular function, which requires further study.

Although sugammadex has been on the market for over a decade, it has been available only in the United States and in Taiwan since the end of 2015. Most of our anesthesiologists are just getting familiar...
with the drug. We thank Dr. Moriwaki for their report as a primer to thoughtfully reevaluate the indications, timing, and appropriate doses of sugammadex. For planning dual-guidance peripheral nerve blocks, we would argue that a strategy of block-before-intubation would solve the concerns mentioned above. Sugammadex is not necessary.

**Conflict of Interest**

The authors received speaking honoraria from Merck Sharp & Dohme Taiwan (Taipei, Taiwan).

**References**


