

Sugammadex Reversal of Rocuronium Block Is Faster Than Spontaneous Recovery from Succinylcholine

Patients given sugammadex 3 minutes after rocuronium recover muscle function faster than those given succinylcholine alone.

Rocuronium is often used for rapid sequence intubation (RSI) when succinylcholine is contraindicated, but clinicians are reluctant to use rocuronium for all patients who require RSI because its duration of action greatly exceeds that of succinylcholine. Sugammadex has been shown to rapidly reverse rocuronium block ([JW Emerg Med Aug 8 2008](#)). Researchers compared time to recovery of neuromuscular function in healthy elective anesthesia patients who were randomized to receive either rocuronium (1.2 mg/kg) followed by sugammadex (16.0 mg/kg) 3 minutes later or succinylcholine (1.0 mg/kg) alone. (Sugammadex was administered 3 minutes after rocuronium to mimic the time required for 2 attempts at intubation to fail, which is the point at which we would consider reversing the block.) All patients received standard anesthetic induction and maintenance agents and were intubated 1 minute after the neuromuscular blocking agent was given by intravenous bolus.

Of 115 patients enrolled, 5 withdrew and were excluded from the analysis. Recovery of neuromuscular function was significantly faster in the rocuronium–sugammadex group than in the succinylcholine group; mean time to 10% twitch recovery was 4.4 versus 7.1 minutes, respectively, and mean time to 90% twitch recovery was 6.2 versus 10.9 minutes. Times from administration of sugammadex to 10% and 90% twitch recovery were 1.2 minutes and 2.9 minutes, respectively. No patient had an adverse effect related to the study agents.

Comment: Some safety issues, mostly allergic reactions, remain to be resolved before sugammadex becomes available for use in North America (it is approved in Europe). If the safety of sugammadex is affirmed, its ability to rapidly and reliably reverse rocuronium block finally might spell the end of the use of succinylcholine for emergency rapid sequence intubation, thus eliminating the need to evaluate patients for conditions that might predispose to succinylcholine-induced hyperkalemia.

— Ron M. Walls, MD, FRCPC, FAAEM

Published in Journal Watch Emergency Medicine May 15, 2009

Citation(s):

Lee C et al. Reversal of profound neuromuscular block by sugammadex administered three minutes after rocuronium: A comparison with spontaneous recovery from succinylcholine. *Anesthesiology* 2009 May; 110:1020.