

INFOGRAPHICS IN ANESTHESIOLOGY

Complex Information for Anesthesiologists Presented Quickly and Clearly

Goldilocks and the three Rocuronium Reversals:

A Sugammadex Dose-finding Study



The manufacturer-recommended dose of sugammadex for reversal of rocuronium is:

- **2 mg/kg** when train-of-four (TOF) count is ≥ 2
- **4 mg/kg** when the TOF count is < 2 with posttetanic count ≥ 1

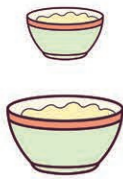


In the current study, Bowdle *et al.* used electromyography to monitor recovery from rocuronium-induced neuromuscular blockade after cardiac surgery. Sugammadex was titrated in 50-mg increments every 5 min until a TOF ratio ≥ 0.9 was obtained.¹

97 Patients Evaluated

Sugammadex dose to achieve TOF ratio ≥ 0.9 ranged from 0.43-5.6 mg/kg

TOF count ≥ 2 (n=68)



Mean sugammadex dose requirement = 1.24 (SD 0.83) mg/kg (less than recommended 2 mg/kg)

11 of 68 (16%) required more than 2 mg/kg to achieve TOF ratio ≥ 0.9



TOF count < 2 (n=29)

Mean sugammadex dose requirement = 2.30 (SD 1.18) mg/kg (less than recommended 4 mg/kg)

2 of 29 (7%) required more than 4 mg/kg to achieve TOF ratio ≥ 0.9

Too Much



84 of 97 (87%) patients did not require the full recommended dose to achieve TOF ≥ 0.9

Too Little



13 of 97 (13%) patients required more than the recommended dose

Just Right



To get the dose just right, quantitative TOF monitoring is strongly recommended

CONCLUSION: While many patients required less than the recommended sugammadex dose to reverse neuromuscular blockade with rocuronium, some required more. Quantitative twitch monitoring is essential to confirm adequate reversal.

Infographic created by Holly B. Ende, Vanderbilt University Medical Center; James P. Rathmell, Brigham and Women's Health Care/Harvard Medical School; and Jonathan P. Wanderer, Vanderbilt University Medical Center. Illustration by Annemarie Johnson, Vivo Visuals Studio. Address correspondence to Dr. Ende: holly.ende@vumc.org.

1. Bowdle TA, Haththothuwegama KJ, Jelacic S, Nguyen ST, Togashi K, Michaelsen KE: A dose-finding study of sugammadex for reversal of rocuronium in cardiac surgery patients and postoperative monitoring for recurrent paralysis. ANESTHESIOLOGY 2023; 139:6–15