Title: Sugammadex versus conventional neuromuscular blockade reversal on surgical throughput times: a retrospective review

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Background/Purpose: Optimizing patient throughput in the operating room (OR) and post-anesthesia care unit (PACU) is key to decreasing delays. One area for optimization is decreasing the time it takes for a patient to progress from the OR to the PACU at procedure completion. While a myriad of circumstances can alter this progression, neuromuscular blockade (NMB) reversal is a critical constraint point that may be ameliorated by pharmacotherapy. This review aimed to determine the effect of sugammadex on OR and PACU throughput times.

Methodology: The institutional review board approved this retrospective cohort study. Patients at least 18 years or older identified as having either sugammadex or neostigmine dispensed from the automated dispensing cabinet (ADC). Over 2,000 ADC removals were identified between October 1, 2018 and March 31, 2019, and 150 patients were randomly selected from both groups using an electronic spreadsheet. Patient charts were reviewed for sugammadex and neostigmine administration time documentation. The primary outcome measure was the time from NMB reversal administration to discharge from the OR. Secondary outcomes include total PACU time and NMB reversal administration to PACU discharge. Exclusion criteria included pregnancy, incarceration, pediatric patients, creatinine clearance < 30 mL/min, and missing or incomplete anesthesia documentation.

Results/Conclusion: The median time from NMB reversal administration to OR discharge was 17 minutes in the sugammadex group versus 22 minutes in the neostigmine group ($p<0.05$). Secondary objectives, including total PACU time for the sugammadex group was 78 median minutes compared to 76 median minutes in the neostigmine group ($p=0.64$) and NMB administration to PACU discharge time for the sugammadex group was 92 median minutes compared to 100 median minutes for the neostigmine group ($p=0.14$) did not show a significant difference. Further study is warranted to realize if this optimization translates into cost savings or other benefits for both patient and processes.