

Smith, R., PharmD; Jurado, L., PharmD, BCPS, BCCCP, BCNSP; Meggs, E., PharmD Candidate

Novant Health New Hanover Regional Medical Center

Wilmington, NC

“EVALUATION OF SUGAMMADEX USE IN SURGICAL PATIENTS”

Background

Sugammadex is a modified gamma cyclodextrin that is commonly used to reverse aminosteroid non-depolarizing neuromuscular blockers. Sugammadex differs from neostigmine by having a faster onset of action. While the short onset of action results in quicker recovery from neuromuscular blockade, this medication is more expensive than alternatives leading to potentially unnecessary drug costs for patients who do not need quick neuromuscular recovery.

Objective

The purpose of this evaluation is to analyze the necessity and appropriateness of the use of sugammadex at our institution.

Methods

In this retrospective analysis, we identified surgical inpatients that were given sugammadex intraoperatively. Patients were excluded if they were less than 18 years old, pregnant, had a history of anesthesia allergies, history of neuromuscular disorders, history of malignant hyperthermia or predicted difficult intubation. We collected demographic data recorded including creatinine clearance, hepatic dysfunction, and intubation status prior to OR. The primary outcome measured the number of patients who remained intubated after surgery and received sugammadex. Secondary outcomes measured number of patients with renal or hepatic dysfunction, patients who received succinylcholine in the OR, and characterized dosing strategies for sugammadex. Cost-savings analyses were calculated for both primary and secondary outcomes.

Results

During the study period of January 1 to June 30, 2021, of 10,229 orders for sugammadex, 50 patients were randomly selected to be included in the final analysis. On average, patients were 56.6 years old, 60 percent were male, weight of 74.3 kg, with a creatinine clearance of 108 mL/min. The average ASA score was 3.1. For the primary outcome, 14 patients (28 percent) remained intubated after surgery. Two patients (4 percent) had hepatic dysfunction and 2 patients (4 percent) had CrCl less than 30 mL/min. The mean dose of sugammadex ordered was 200 mg (78 percent) and the most common initial paralytic used was rocuronium (98 percent). For the 18 patients who required a second paralytic (36 percent), 11 (22 percent) patients received succinylcholine. If patients who remained intubated postoperatively were not given sugammadex, cost savings were calculated to be 1,441.30 dollars.

Conclusion

We found that sugammadex is commonly given to patients who remain intubated after surgery, and that there is room for optimization of sugammadex use.