

Sugammadex-Induced Bradycardia and Cardiac Arrest

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INTRODUCTION

- Neuromuscular blockade facilitates intubation, ventilation, and surgical conditions
- Residual neuromuscular blockade can lead to postoperative pulmonary complications
- Sugammadex reported efficacious AND safer than neostigmine
- **Significant** adverse drug reaction rates are similar to those of neostigmine

CASE DESCRIPTION

- Acute onset abdominal pain with free air on imaging
- To OR for emergent exploratory laparotomy
- PMH atrial fibrillation, coronary artery disease, left ventricular and septal hypertrophy, multiple prior abdominal surgeries
- Hemodynamically stable
- Diltiazem drip for rate control
- Reversed with sugammadex
- Developed hypotension and bradycardia
- Cardiac arrest
- Presumed anaphylaxis
- Treated with epinephrine and vasopressors
- Negative tryptase
- Two prior anesthetics for abdominal surgeries; one with rocuronium reversed with sugammadex and the other with cisatracurium
- Similar hemodynamic reaction only during anesthetic where sugammadex was given

Assessment Questions	Yes	No	Don't Know
1. Are there previous conclusive reports on the ADR?	+1	0	0
2. Did the ADR appear after the suspected drug was given?	+2	-1	0
3. Did the ADR improve when the drug was discontinued or a specific antagonist was given?	+1	0	0
4. Did the ADR appear when the drug was re-administered?	+2	-1	0
5. Are there alternative causes that could have caused the ADR?	-1	+2	0
6. Did the reaction reappear when a placebo was given?	-1	+1	0
7. Was the drug detected in any body fluid in toxic concentrations?	+1	0	0
8. Was the reaction more severe when the dose was increased, or less severe when the dose was decreased?	+1	0	0
9. Did the patient have a similar reaction to the same or similar drugs in any previous exposure?	+1	0	0
10. Was the ADR confirmed by any objective evidence?	+1	0	0
Fierro Total Score	7		

ADR = Anesthesia Drug Reaction

Sugammadex can induce severe bradycardia, leading to cardiac arrest and requiring quick diagnosis and treatment

DISCUSSION

- Possibly multifactorial
- Temporal relationship between sugammadex dosing, hemodynamic instability and cardiac arrest
- Two prior anesthetics, one with similar reaction
- Unclear underlying mechanism of reaction
- No increase in incidence with dosing until dose increased to 16 mg/kg
- Fierro Total Score: 7

CONCLUSIONS

- Sugammadex remains an important option for reversal of neuromuscular blockade, but comes with the risk of adverse reactions
- Administer slowly
- Continue 5 lead EKG and hemodynamic monitoring
- Further investigation of mechanisms that induce negative cardiovascular effects with sugammadex

REFERENCES

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