

Case Report: Suspected Anaphylaxis after Administration of Sugammadex

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ABSTRACT

Anaphylaxis is a severe, life-threatening hypersensitivity reaction that can occur rapidly after exposure to an allergen. Sugammadex is a novel neuromuscular blockade reversal agent used to counteract the effects of amino steroid muscle relaxants such as rocuronium and vecuronium. Although generally considered safe, there have been rare reports of anaphylaxis following sugammadex administration. This case report describes an incident of anaphylaxis triggered by sugammadex, highlighting the clinical presentation, management, and potential implications for anesthesia practice.

Keywords

Allergy, Anaphylaxis, Sugammadex.

Introduction

Sugammadex is a cyclodextrin derivative that selectively binds to amino steroid neuromuscular blocking agents, rapidly reversing their effects. Its use has become increasingly common due to its efficacy and favourable safety profile. However, as with any pharmacological agent, adverse reactions can occur. Anaphylaxis to sugammadex, although rare, is a serious concern due to its sudden onset and potential severity.

Case Presentation

Patient Profile

- Age: 48-year-old
- Gender: Female
- Weight: 120 kg and BMI 45.2
- Medical History: Known Catamenial Anaphylaxis, HTN, Osteoarthritis, Fibromyalgia and vitamin B12 deficiency.
- Allergic History: Penicillin and Plasters
- Surgical Procedure: Elective laparoscopic Bilateral Salpingo-oophorectomy

Clinical Course

Preoperative: Patient was premedicated with midazolam. Anesthesia was induced with TCI propofol and Remifentanyl,

followed by 100 mg rocuronium for muscle relaxation and intubation. Intubation was done uneventfully.

Intraoperative

- Prophylactic Antibiotic was given (Gentamycin 240mg and Metronidazole 500mg IV)
- Anaesthesia Was Maintained with TCI Propofol and Remifentanyl.
- 10 mg morphine IV, parastomal 1 gm IV, and Ketorolac 30 mg IV were given for pain.
- The surgery proceeded uneventfully, and sugammadex (500 mg) was administered to reverse the neuromuscular blockade at the end of the procedure.
- **Reaction:** Within 2 minutes of sugammadex administration, the patient developed massive bronchospasm (saturation dropped and airway pressure was very high), and severe hypotension (blood pressure dropped to 68/52 mmHg).

Management: An anaphylactic reaction was immediately suspected. The patient was treated with:

- Ventilation was maintained positive bag mask ventilation.
- Intravenous epinephrine (initial bolus of 0.5mg)
- Fluid resuscitation with crystalloids
- Aminophylline 500mg IV with 100 ml Normal saline bag.
- Magnesium Sulphate 5 gm IV.
- Antihistamines (IV diphenhydramine)

- Corticosteroids (IV hydrocortisone)
- Bronchodilators (nebulized Salbutamol)
- The patient's symptoms improved with this treatment regimen. She was extubated and moved out of theatre to Recovery. She was admitted in the intensive care unit (ICU) for 24 hours and recovered without further complications.

Discussion

Anaphylaxis is a critical condition that requires prompt recognition and treatment. Sugammadex-induced anaphylaxis, although uncommon, should be considered in the differential diagnosis when a patient develops sudden hypersensitivity reactions in the perioperative period. The pathophysiology is not entirely understood but may involve direct histamine release or IgE-mediated mechanisms.

Key Points:

- **Incidence:** Reports suggest a low incidence of sugammadex-induced anaphylaxis, but clinicians should remain vigilant.
- **Recognition:** Rapid identification of anaphylactic symptoms (cutaneous, cardiovascular, respiratory) is crucial.
- **Management:** Immediate administration of epinephrine is the cornerstone of treatment, along with supportive measures

such as fluids, antihistamines, and corticosteroids.

- **Prevention and Preparedness:** Anesthesia providers should be prepared for anaphylactic emergencies, with protocols and medications readily available.

Conclusion

This case underscores the importance of awareness and preparedness for rare but severe reactions like anaphylaxis following sugammadex administration. Although sugammadex is generally safe and effective, anesthesiologists and perioperative teams must be equipped to recognize and manage anaphylactic reactions swiftly to ensure patient safety.

References

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