A case of anaphylactic shock induced by sugammadex in China

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Abstract
Sugammadex, an antagonist of neuromuscular blocking drugs, was used to rapidly reverse rocuronium induced neuromuscular blockade by encapsulating free rocuronium molecules as inclusion complexes. Because it can enhance the rapid recovery after surgery, summadex is gradually used in clinical. There are relatively few reports about anaphylactic reaction to it. We will present a case of severe anaphylactic shock induced by summadex, as the first in China.

Short report
A 60-year-old, 70 kg man, who has no special history, and denied any medical allergies, underwent elective Da Vinci assisted radical prostatectomy. General anaesthesia was induced with Sufentanil (30 ug) and an intravenous infusion of propofol targeted to an effect site concentration of 4.5 ug/mL. Rocuronium (50 mg) was then administered, and Dexamethasone was injected intravenously at the same time. Anaesthesia was maintained by intravenous infusion of remifentanil targeted to an effect site concentration of 1.5 ng/ml and propofol 3 ug/mL. A subsequent dose of rocuronium (10 mg) was administered at 45 min intervals after the induction of anaesthesia. The patient regained consciousness, but his respiration was not fully restored at the end of the operation. As indications for removal of endotracheal tube were met, the endotracheal tube was extubated immediately after sugammadex 100 mg was given as a bolus via the central vein. Seconds later, the patient’s heart rate rapidly decreased to 50 bpm with loss of consciousness, decreased pulse oxygen, undetectable blood pressure, and then a minimal heart rate of 35 bpm. Several injections of epinephrine were given and an emergency tracheal tube was inserted again, a concomitant injection of methylprednisolone was administered. Systemic disseminated wheal was seen after stabilization of circulation and gradually resolved after 4 hours.
The patient recovered well and was discharged home a week later. Routine postoperative follow-up showed no abnormalities.

Two months after surgery, intradermal allergy tests were performed with dilutions of propofol, rocuronium, sufentanil, remifentanil and sugammadex. All drugs were diluted to 1:1000 and reactions were negative. However, a 1:100 dilution of sugammadex produced a positive response.

Any medicine has side effects, the incidence of anaphylaxis to sugammadex, although low, is extremely harmful, and we should pay attention to it. This is a case of tachyphylaxis induced by sugammadex, it is recommended to observe for several minutes after administration before withdrawing the endotracheal tube. In addition, we should also guard against the occurrence of delayed onset anaphylaxis, and enhanced postoperative monitoring is necessary.