

Sugammadex: Safe for Ambulatory Surgery in Patients with ALS?

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Introduction

Amyotrophic lateral sclerosis (ALS) is an autosomal- dominant disease which characterized by degeneration of upper and lower neurons [1]. Sugammadex, is an agent acts encapsulating steroidal muscular relaxant to form a stable complex, thereby reduction of free concentration of the muscle relaxant from the plasma, which provides rapidly recovery from neuromuscular blockage effect. This complex of sugammadex and muscle relaxant is freely excreted through the kidneys [2]. Sugammadex in recent years frequently has been used, with neuromuscular disease patients, who require neuromuscular blockage in the implementation of general anesthesia. But in ambulatory surgery it is hard to use muscle relaxant in patients with a neuromuscular disease. In this case report, we described general anesthesia administration and use of sugammadex – rocuronium in a patient with ALS in ambulatory surgery.

Case Description

A 51 year-old, 80 kg man was scheduled for percutan endoscopic gastrotomy (PEG) at department of gastroenterology. He was diagnosed with ALS 4 years prior, and has been replaced diaphragmatic pace which hadn't been efficient. He has tracheostomy cannula and spontan intermitan ventilation by homoventilator at home. His preoperative physical examination and laboratory results –which were complete blood count, biochemistry, coagulation parameters- and chest radiogram, ECG were normal.

In operation room after non-invasive blood pressure, pulse oximeter analysis, and ECG monitoring 0.5 mg/kg propofol IV administered twice, but it wasn't efficient for preparing patient for mouth holder. In order to perform the procedure we decided to administer general anesthesia. We applied 80 mg propofol and 0.3 mg/kg rocuronium IV but it wasn't sufficient to open the mouth, so rocuronium completed to 0.6 mg /kg dose. Procedure maintained approximately 15 min by the time SPO₂ was around 96-99. After procedure 2 mg/kg sugammadex and 0.2 mg anaxate IV administration patient's spontane eye movement was obtained. He was transported to the PACU with homoventilator support.

Discussion

We used sugammadex and rocuronium safely in patient with ALS. Recent studies have shown patients with ALS are susceptible to non-depolarizing neuromuscular blockers [3]. ALS is not a common disease so there is not enough publication with these patients using general anesthesia management with non-depolarizing neuromuscular blocking agents. Wachi et al. [4] reported an 86 year-old patient administered general anesthesia with propofol remifentanyl and 0.52 mg/kg rocuronium for elective colostomy to the ileus. Also Ohshita et al. [5] published a case report about a 31 year old woman patient with ALS, was scheduled for tracheotomy. They administered sugammadex for general anesthesia management with success. But there is no published literature which used sugammadex for ambulatory surgery patients with neuromuscular diseases such as ALS.

Also in the literature there are case reports preferable anesthetic managements such as epidural anesthesia [6] or general anesthesia without muscle relaxant [7] in patients with ALS. In our case we had to use muscle relaxant for mouth opening and also we didn't prefer central neuraxial block which is relatively contraindicated of exacerbating progression of disease pattern [8]. Patients with ALS anesthesia management should contain the least embroil with disease and provide the maximum conditions for operation and also adequate analgesia. In this case we showed that general anesthesia with rocuronium and sugammadex can be used safely with these patients for ambulatory surgery.

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