Reviewer's report

Title: Rocuronium blockade reversal with sugammadex vs. neostigmine: randomized study in Chinese and Caucasian subjects

Version: 1  Date: 31 January 2014

Reviewer: Michele Carron

Reviewer's report:

Major Compulsory Revisions. None

Discretionary Revisions

1. Methods - Study Procedure.
   a. “…IV propofol according to the clinical needs of the subject”. Was deep anesthesia monitored (bispectral index or entropy monitoring)? The use of the bispectral index monitoring resulted in less complications (i.e. intraoperative awareness, postoperative nausea and vomiting) (Klopman MA, Curr Opin Anaesthesiol 2011).
   b. “…use of oxygen in air or nitrous-oxide”: May the choice of nitrous-oxide have had an influence in the incidence of AEs in the study (es. high incidence of nausea and vomiting)?

2. Methods - Efficacy analyses. “…TOF ratio to 0.9 was >6 min… classed as a prolonged recovery time”. Could the Authors explain why >6 min? Generally, sugammadex allows a recovery to a TOF ratio #0.9 in #3 min (Groudine SB, Anesth Analg 2007; Sorgenfrei IF, Anesthesiology 2006; Schaller SJ, Core Evid. 2013). For this reason, some Authors believe adequate a time less than 3 min for a safe reversal and risky a time greater than 3 min (Le Corre F, Can J Anaesth 2011; Llauradó S, Anesthesiology 2012; Schaller SJ, Core Evid. 2013). A reversal time of about 5 min was associated to recurarization (Le Corre F, Can J Anaesth 2011)

3. Results - Efficacy analyses.
   a. As for the Caucasian population, the Authors should report the fastest and slowest times to recovery following neostigmine administration in Chinese population
   b. Comparable median times in the recovery of TOF to 0.9 following sugammadex administration were observed in Chinese and Caucasian subjects (1.6 vs 1.4 min, respectively). On the contrary, the median times to recovery to TOF 0.9 following neostigmine administration were different (9.1 vs. 6.7 min, respectively). It appears an important difference. The Authors should comment.

4. Results - Safety.
   a. In the Methods–Safety section, the Authors considered the “treatment-related AEs” those “related…to sugammadex or neostigmine administration”. The
Authors should better specify if some of the AEs reported, such as “incision site pain, procedural pain, wound complication, vaginal hemorrhage” are really related to reversal drug administration. In particular, the vaginal hemorrhage appears unlikely related to study drug. Any influences of the other factors (i.e. surgery)? This may be important if one considers that sugammadex led to prolonged activated partial thromboplastin time (aPTT) and prothrombin time (PT) or international normalized ratio (INR) for a short time (below 30 minutes) (Schaller SJ, Core Evid. 2013). These effects were not found to be clinical relevant. So, in my opinion, it’s important to exclude a possible role of sugammadex in bleeding.

b. Anesthetic cardiac complications. This point appears not very clear. The Authors should better specify in what they consist and, possibly, comment.

1. Discussion. Any differences in rocuronium-induced neuromuscular block and its reversal by neostigmine in Chinese population? In literature, the affinity of nicotinic receptor seems to be increase in Chinese subjects (Collins LM, Anesth Analg. 2000), so explaining the increased duration of NMB and the time to its reversal by means of neostigmine administration.

Minor Essential Revisions:
1. Abstract (i.e.results) and main text (i.e.conclusions): please insert endotracheal before intubation.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

This reviewer has received payments for lectures from Merck Sharp & Dohme (MSD), Italy.