Reviewer’s report

Title: Preparing for the unexpected: Special considerations and complications after sugammadex administration

Version: 0 Date: 21 May 2017

Reviewer: Christoph Unterbuchner

Reviewer’s report:

Dear Authors,

you have submitted a well written review about the possible new challenges after sugammadex administration.

The problems and safety challenges after sugammadex administration are described very detailed in the context of different pathologic stages.

There are some minor amendments that should be added in my opinion:

1)Thematic amendments:

a) It would be nice to get more information about the outcome (PORC, pulmonary), when sugammadex is compared to neostigmine.

Literature:

The effect of routine availability of sugammadex on postoperative respiratory complications: a historical cohort study.

Olesnicky BL, Traill C, Marroquin-Harris FB.

Minerva Anestesiologica. 2017 Mar;83(3):248 - 254

Retrospective investigation of postoperative outcome after reversal of residual neuromuscular blockade: sugammadex, neostigmine or no reversal.

Ledowski T, Falke L, Johnston F, Gillies E, Greenaway M, De Mel A, Tiong WS, Phillips M.

Randomized comparison of sugammadex and neostigmine for reversal of rocuronium-induced muscle relaxation in morbidly obese undergoing general anaesthesia.

Gaszynski T, Szewczyk T, Gaszynski W.


A systematic review of sugammadex vs neostigmine for reversal of neuromuscular blockade.


Anaesthesia. 2015 Dec;70(12):1441-52

Postoperative impairment of motor function at train-of-four ratio ≥0.9 cannot be improved by sugammadex (1 mg kg⁻¹).

Baumüller E, Schaller SJ, Chiquito Lama Y, Frick CG, Bauhofer T, Eikermann M, Fink H, Blobner M.

Br J Anaesth. 2015 May;114(5):785-93

b) Furthermore it would be very interesting for the reader to broach the use of sugammadex in orphan or neuromuscular diseases:

Literature:

Anesthetic consideration for neuromuscular diseases.

Katz JA, Murphy GS.


Anaesthesia for thymectomy in adult and juvenile myasthenic patients.

Sungur Z, Sentürk M.

Curr Opin Anaesthesiol. 2016 Feb;29(1):14-9

c) To my understanding use of sugammadex in children is slightly underrepresented:

Literature:
A comparison of sugammadex and neostigmine for reversal of rocuronium-induced neuromuscular blockade in children.

Ammar AS, Mahmoud KM, Kasemy ZA.


Current evidence for the use of sugammadex in children.

Tobias JD.

Paediatr Anaesth. 2017 Feb;27(2):118-125

2) General amendments:

a) Page 6, line 7: 2 mg/ kg BW is the dosing for the presence of at least two twitches, so this dosage is for moderate (TOF count 1-3) and shallow neuromuscular blockade (TOF count of 4 with fading).

b)Page 7, line 1: It might be a clearer formulation to use reversing instead of antagonism, because encapsulation is another mechanism in comparison to antagonism with acetylcholine esterase inhibitors like neostigmine.

c)Page 9, line 9: In my opinion brueckmann’s study showed several metholodical limitations, which should be mentioned. There were to letters which discussed this issue:

Is one acceleromyographically measured train-of-four ratio sufficient after sugammadex to identify residual curarization in postoperative, awake patients?

Unterbuchner C.


Sugammadex and residual neuromuscular block: what is acceptable normal practice?

Todd MM.


d)Page 10, line 5: To my knowledge it is not possible to examine binding of all rocuronium molecules to sugammadex by quantitative neuromuscular monitoring.

An alternative formulation could be: On the one hand, there should be applied an dose of sugammadex adapted to the depth of neuromuscular blockade.
e) Page 23, table 1, line 20: when dosed based on...., sounds not correct--> alternative formulation: dosing

f) Page 23, table 1, line 32: Data were collected in mild hyothermia

g) Page 16, line 17: Carron instead of Caron

3) Literature amendments:

Please insert citation in:

a) Page 8, line 3
b) Page 8, line 9
c) Page 8, line 14
d) Page 10, line 2
e) Page 10, line 12
f) Page 10, line 15
g) Page 11, line 10
f) Page 12, line 8
g) Page 13, line 9
h) Page 19, line 9
i) Page 19, line 11
j) Page 20, line 11
k) Page 23, table 1
l) Page 45, figure 2

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
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**Are the conclusions drawn adequately supported by the data shown?**
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