

SOCIETY FOR OBSTETRIC ANESTHESIA
2022 SAMBA ANNUAL MEETING
MAY 11 - 14, 2022



Sugammadex

Dr. Catherine Tobin
SNAP talks
May 13th 8am-9:15am

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Basic Facts



- Reverses rocuronium and vecuronium (amino steroidal NMB's)
- Modified cyclodextrin that antagonizes thru encapsulation.
- Dosing based on actual body weight (not ideal) and depth of block.
- If at least 2/4 twitches. 2mg/kg
- If ¼ twitch, of 0/4 with post tetanic twitches 4mg/kg
- If 0/4 twitch and no post tetanic, (can't intubate or ventilate) 16mg/kg

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Pregnancy and Lactation....

(Statement April 2019)

Pregnancy:

- Early: AVOID (Sugammadex encapsulates progesterone, progesterone is critical need more studies before we know it is safe)
- Term/or NEAR Term: USE WITH CAUTION (safe for Maternal under C section for example, however lactation success data not there)

Lactation: If established ok, if new to breast feeding or term pregnancy avoid

Patients of child bearing age: SAFE, counsel if on birth control.

PATIENTS FOR WHOM BENEFIT MAY OUTWEIGH THEORETICAL OR UNKNOWN RISKS TO FERTILITY, PREGNANCY, OR LACTATION

- Can't intubate/Ventilate and sugammadex would reverse NMB.
- Patients on cholinesterase inhibitors reaching a ceiling effect but who remain at an elevated risk for inadequate reversal, i.e. postoperative residual neuromuscular blockade due to high-dose magnesium therapy, or Myasthenia gravis.

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Birth Control

- If an oral contraceptive is taken on the same day that sugammadex is administered, the patient must use an additional, non-hormonal contraceptive method or back-up method of contraception (such as condoms and spermicides) for the next 7 days.
- Avoid if on birth control....
- Our hospital has something that auto-populates and it is in writing and given the patient in PACU.

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Anaphylaxis

- If from Rocuronium:
- Some case reports support treatment with Sugammadex.
- However, recent study did not support and in vitro does not support.

(Platt PR, Clarke RC, Johnson GH, Sadleir PHM. Efficacy of sugammadex in rocuronium-induced or antibiotic induced anaphylaxis. A case-control study. *Anaesthesia* 2015;70:1264-7)

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Anaphylaxis from Sugammadex

A review of 33 cases.

In 93% onset time is first 5 minutes (signs and symptoms)

Incidence-not well established

High side 1 in 2,500 (0.039%)

Treatment: 1st line: Epinephrine (In study, 25% of cases did not get it)

(steroids, histamine blockers, albuterol, order tryptase to confirm)

Arslan, Baris; Sahin, Tuna; Ozdogan, Hatice Sugammadex and anaphylaxis, *Journal of Anaesthesiology Clinical Pharmacology*: Apr-Jun 2021 - Volume 37 - Issue 2 - p 153-159.

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Ok to use in dialysis patients?

- Not approved in ESRD.....
- The elimination half-life of sugammadex for adults with normal renal function is approximately 2 hours, with over 90% excreted within 24 hours, primarily in urine.
- The Sugammadex/Roc/Vec complex is hydrophilic and excreted unchanged in the urine.

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Sugammadex in ESRD: too early for a "free-pass"

- Can J Anaesth. 2021 Feb;68(2):264-265.
- Paredes S, Porter SB, Porter IE 2nd, Renew JR. Sugammadex use in patients with end-stage renal disease: a historical cohort study. Can J Anaesth. 2020 Dec;67(12):1789-1797.

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Review Efficacy and Safety of Sugammadex for the Reversal of Rocuronium-Induced Neuromuscular Blockade in Patients with End-Stage Renal Disease: A Systematic Review and Meta-Analysis

Yung-Sung Kim, Byung-Gon Lim, Young-Ju Won, Seok-Kyeong Oh, Jung-Suk Oh and Soo-Ah Cho

Department of Anesthesiology and Pain Medicine, Wonju University School of Medicine, Wonju, Korea

- **Recovery is slower**
"Sugammadex may effectively and safely reverse rocuronium-induced NMB in patients with ESRD, although the recovery time to a TOF ratio of 0.9 may be longer in patients with ESRD than those with normal renal function"

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Already gave Sugammadex (4mg/kg) Need paralysis again, now what?

- Give succinylcholine or cisatracurium 1st choice..

Minimum Waiting Time	NMBA and Dose to be Administered
5 minutes	1.2 mg/kg rocuronium
4 hours	0.6 mg/kg rocuronium or 0.1 mg/kg vecuronium

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Peds? Yes it is Ok....

- "Safety and effectiveness in patients younger than 2 years of age have not been established"
- Not approved in kids under 2years old....
- When I asked my peds colleagues at work, they "use it all the time in kids under 2, even the neonates!"

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Bradycardia is a known, but rare side effect

- Some studies suggest 1-2% in adults, one study up to 7%, maybe higher in peds.
- Case reports of asystole.
- In 2008 sugammadex was approved in Europe, in United States 2015. Delays were due to concerns for anaphylaxis and bradycardia.
- Give drug over 30 seconds.
- If needed treat with anti-cholinergic or ephedrine.
- Just be aware!

• Kapoor MC. Cardiovascular adverse effects of sugammadex. J Anaesthesiol Clin Pharmacol. 2020 Oct-Dec;36(4):469-470. doi: 10.4103/joacp.JOACP_132_20. Epub 2020 Sep 29. PMID: 33840925; PMCID: PMC8022047.

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Money, Money, Money

My hospital now limits us:

Criteria for use: (At my institution)

- ASA score of 3 or 4
- Upper abdominal or thoracic surgery
- BMI over $>40 \text{ kg/m}^2$



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References

- https://www.soap.org/assets/docs/SOAP_Statement_Sugammadex_During_Pregnancy_Lactation_APPROVED.pdf
- Arslan, Baris; Sahin, Tuna; Ozdogan, Hatice Sugammadex and anaphylaxis, Journal of Anaesthesiology Clinical Pharmacology: Apr–Jun 2021 - Volume 37 - Issue 2 - p 153-159.
- Platt PR, Clarke RC, Johnson GH, Sadleir PHM. Efficacy of sugammadex in rocuronium-induced or antibiotic induced anaphylaxis. A case-control study. *Anaesthesia* 2015;70:1264-7)
- Magoon R, Kashav R, Kohl J. Sugammadex in end-stage renal disease: too early for a "free-pass". *Can J Anaesth*. 2021 Feb;68(2):264-265. doi: 10.1007/s12630-020-01860-9. Epub 2020 Nov 16. PMID: 33200322.
- Kim YS, Lim BG, Won YJ, Oh SK, Oh JS, Cho SA. Efficacy and Safety of Sugammadex for the Reversal of Rocuronium-Induced Neuromuscular Blockade in Patients with End-Stage Renal Disease: A Systematic Review and Meta-Analysis. *Medicina (Kaunas)*. 2021 Nov 17;57(11):1259. doi: 10.3390/medicina57111259. PMID: 34833477; PMCID: PMC8622972.
- Kapoor MC. Cardiovascular adverse effects of sugammadex. *J Anaesthesiol Clin Pharmacol*. 2020 Oct-Dec;36(4):469-470. doi: 10.4103/joacp.JOACP_132_20. Epub 2020 Sep 29. PMID: 33840925; PMCID: PMC8022047.

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