Rocuronium should be the drug of choice for RSI in obstetrics | Con

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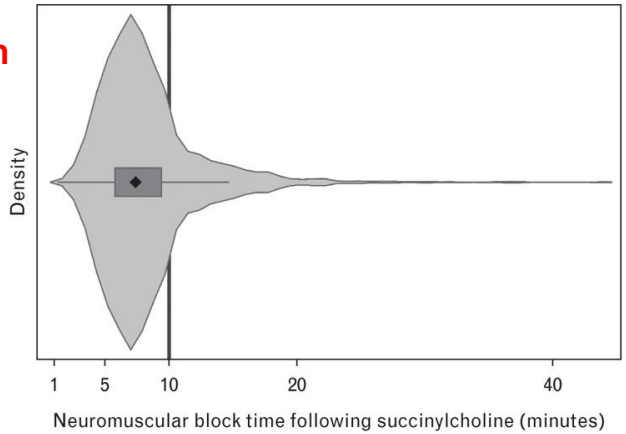
Intubation conditions

16 % had NMB duration >10 min

Salome et al. Eur J Anaesthesiol 2015;32:687-96



- **Advantages of roc**
- Non-inferior time to intubation (dose 1 mg/kg)
- Less myalgia
- Block can be reversed more predictably (~3 min vs ~10 min)
- Fewer rare contraindications than sux (MH, hyperK+, muscular dystrophies)
- ~~Equivalent quality of intubation~~

Tran et al. Cochrane Database Syst Rev 2015;10:CD002788
Williamson et al. Acta Anaesthesiol Scand 2011;55:694-9
Kosinova et al. IJOA 2017;32:4-10

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Intubation conditions

- **Disadvantages of roc**
- variability of onset is greater

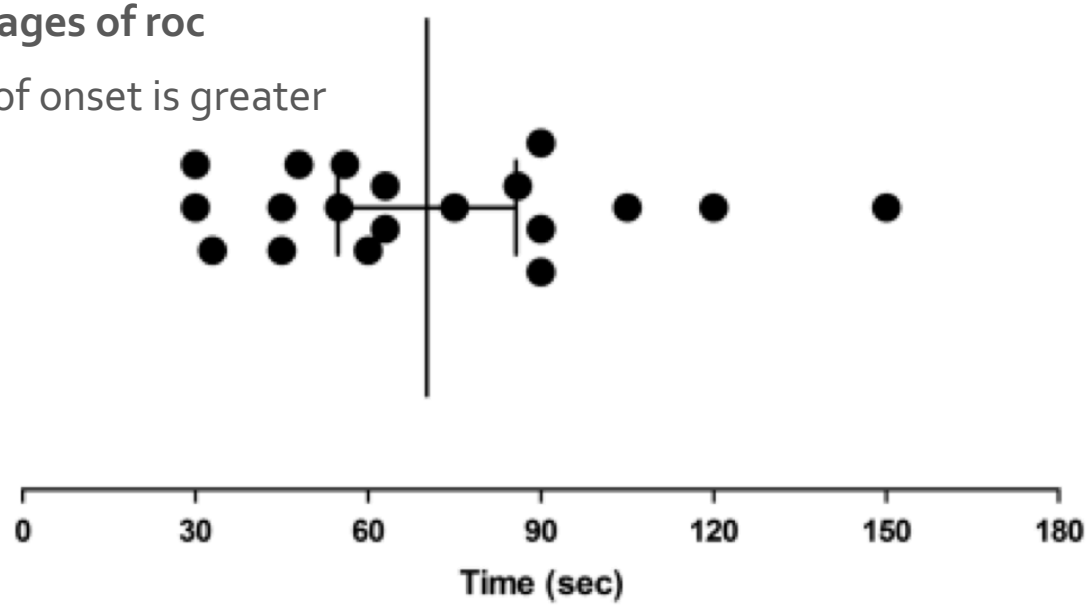

Fig. 1. Time from the administration of rocuronium to ablation of train-of-four ratio response (s). Mean 70 s; 95% CI 55–86 s.

Williamson et al. Acta Anaesthesiol Scand 2011;55:694-9
Cooper et al. Br J Anaesth 1992;69:269–73

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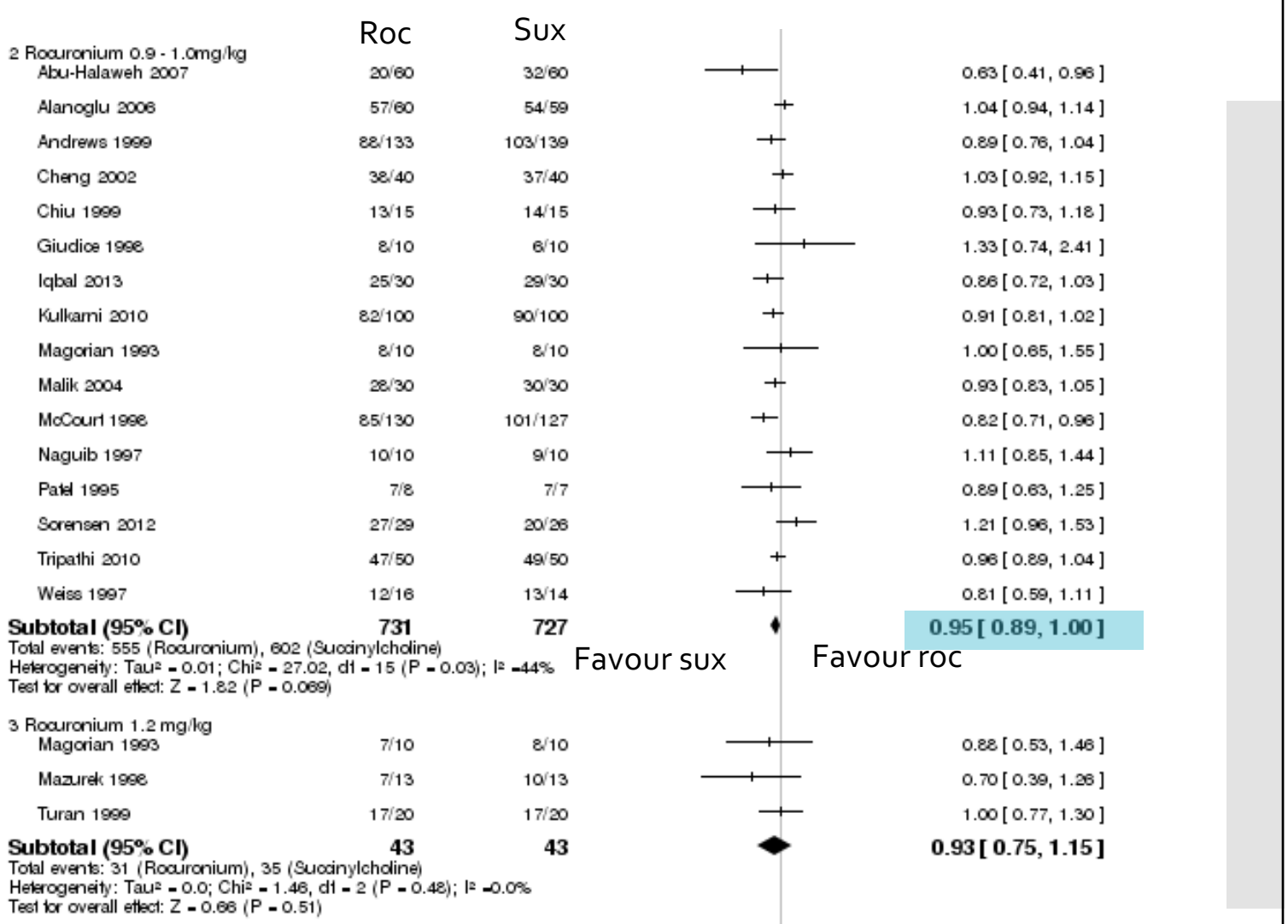
Excellent vs other intubating conditions (n/N)



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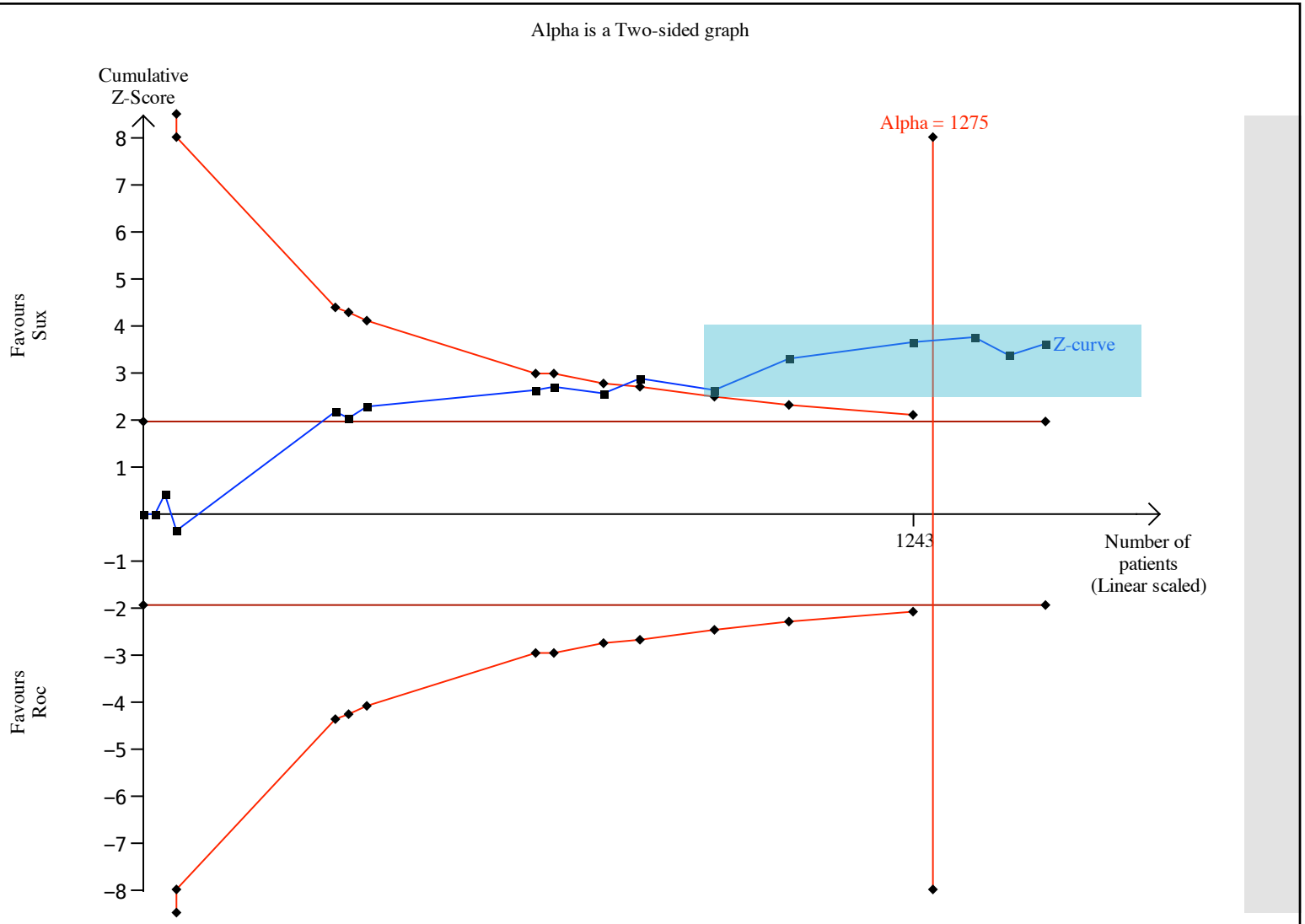
Trial sequential analysis of same data – 10% difference in excellent intubating conditions



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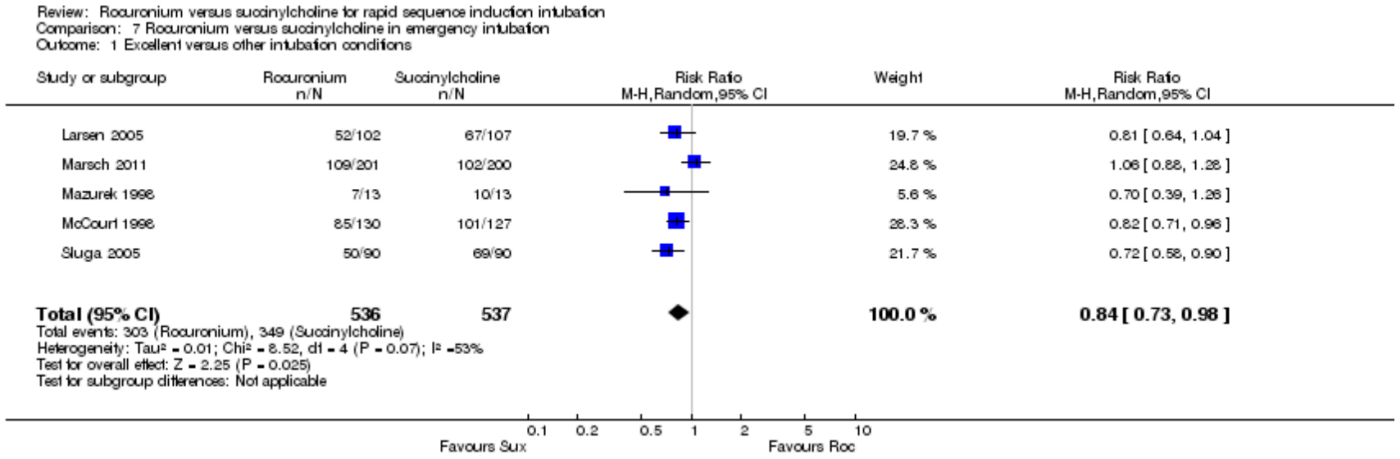
Sux superior in emergency intubation scenarios



- RR 0.84 (0.73-0.98)

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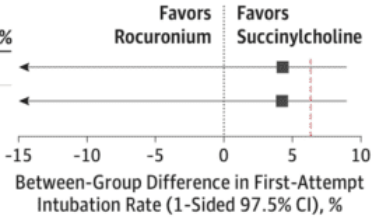
Failure of non-inferiority for roc in emergency intubations

Figure 2. Difference in Successful First-Attempt Intubation Rate Between Patients Given Rocuronium vs Succinylcholine While Undergoing Out-of-Hospital Rapid Sequence Intubation

	No. of Patients/Total No. (%)		
	Rocuronium Group	Succinylcholine Group	Absolute Difference (1-Sided 97.5% CI), %
Randomized group analysis	456/613 (74.4)	489/617 (79.2)	-4.8 (-9.1 to ∞)
Per-protocol analysis	455/610 (74.6)	489/616 (79.4)	-4.8 (-9.0 to ∞)



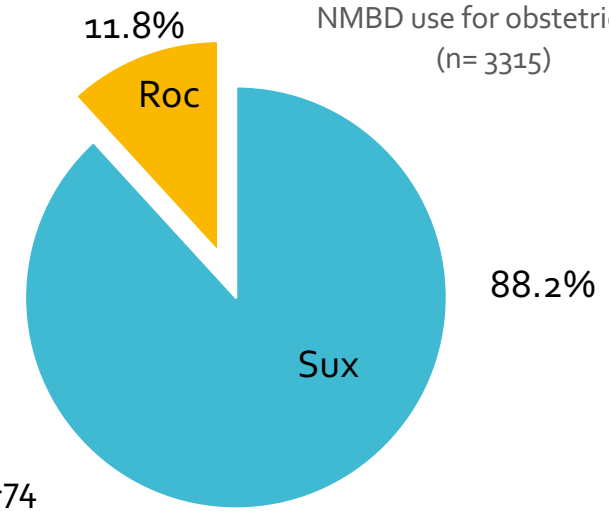
The dashed line represents the noninferiority margin of 7%. Because the CI lines go above the prespecified noninferiority margin of 7%, the null hypothesis that succinylcholine is superior cannot be rejected.

- Multicentre, single-blind, non-inferiority RCT
- roc (1.2 mg/kg) vs sux (1 mg/kg) for RSI in 1248 out-of-hospital adult patients
- noninferiority margin of 7%
- Fewer successful first attempt intubations in roc group

Guihard et al. JAMA 2019; 322(23):2303-2312

Context in obstetric practice

- **Failed intubation:** 1 in 390 (1970 – 2014; international)
  1 in 309 (95% CI 1 in 170 – 1 in 625) (2017-2018; UK)
- **Difficult intubation:** 1 in 18 (95% CI: 1 in 16 – 1 in 21)



NMBD use for obstetric RSI
(n= 3315)

Kinsella et al. IJOA 2015;24:356-74
Odor et al. Publication pending
Desai et al. IJOA 2018;36:3-10

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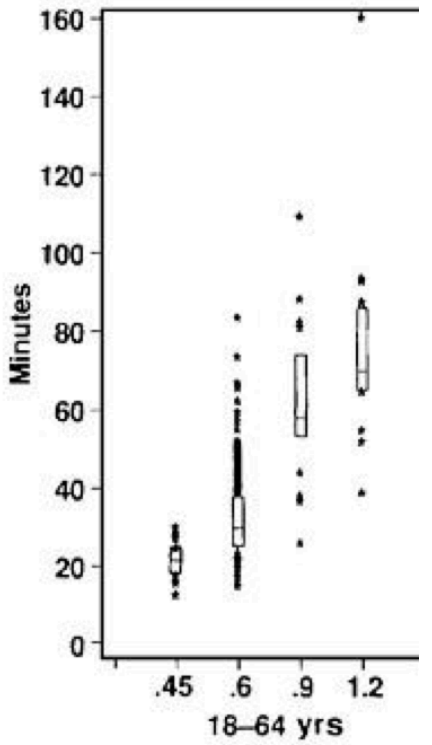
Roc requires sugammadex "on hand"

- Median duration of effect @ 1mg/kg = **67 mins**
- Mandatory immediate availability of sugammadex
- Risk of residual block
- Cost implications
- Hypersensitivity/anaphylaxis risk
- Sugammadex
  - no published evidence regarding presence of sugammadex in human breast milk following maternal administration
  - risk of hormone contraceptive failure



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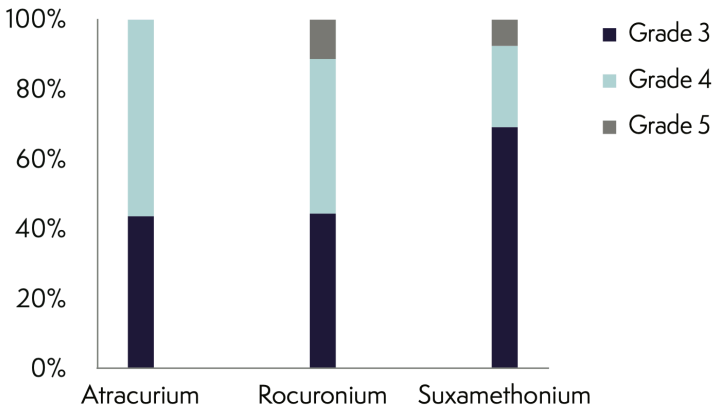
Anaphylaxis in NAP6

- Suxamethonium = 11.1/100,000 uses
- Rocuronium = 5.88 /100,000 uses
- But severity of anaphylaxis greater with roc than sux (3 deaths vs 1)
- Sugammadex incidence not estimated in NAP6, but variably reported as:
  - Hypersensitivity: up to 5% (32/597)
  - Anaphylaxis: up to 0.3% (2/597)

Figure 1. Severity of NMBA-induced anaphylaxis



de Kam et al. Br J Anaesth 2018;121:758-67
Min et al. Br J Anaesth 2018;121:749-57

Maternal-fetal transfer of roc

- Placental transfer roc
  - UV:MV ratio for rocuronium of 0.16 from study of 32 women @ 0.6 mg/kg
- Contentious neonatal impact
- 488 women combined from two separate studies; roc 1 mg/kg vs sux 1 mg/kg

Apgar score <7	Rocuronium	Suxamethonium	
1 min	46 (17.5%)	27 (10.3%)	0.023
5 min	21 (8.0%)	11 (4.2%)	0.1
10 min	8 (3.0%)	5 (1.9%)	0.58

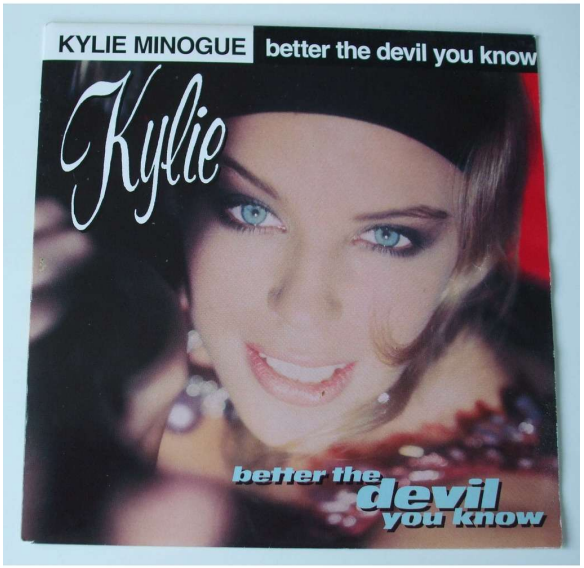
Kosinova et al. IJOA 2017;32:4-10

Obs RSI ≠ non-obs RSI

- "Soft" benefits for sux:
- Reminder of task fixation
- Avoid multiple attempts at intubation
- Duration of action for sux gives sufficient time for 2 intubation attempts, then acts as visual reminder to potentially abandon intubation

Summary

1. More consistent attainment of higher quality, first attempt intubation conditions with sux
2. Risks of rocuronium and compounded by a need to include the poorly quantified risks of sugammadex too
3. Current data is still lacking for maternal/neonatal specific outcomes after rocuronium
4. **Better the devil you know?**



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