



ROC V SUX

Rocuronium vs. succinylcholine for rapid sequence intubation:
a Cochrane systematic review

Presentation by Dr Rajin Chowdhury

Rapid
sequence
induction

Meta-
analysis

“...prompt sequential administration of a predetermined dose of hypnotic agent and muscle relaxant followed by tracheal *intubation within 1 min* of giving the muscle relaxant”

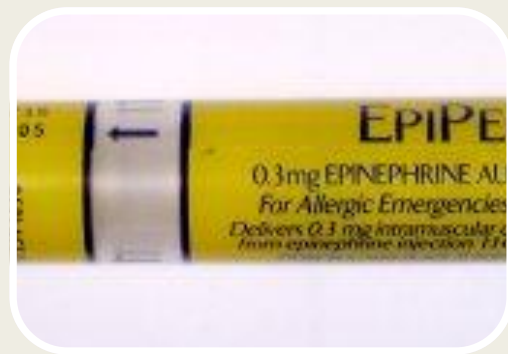
...and the winner is

Suxamethonium

“...moderate-quality evidence that succinylcholine creates better intubation circumstances than rocuronium.”



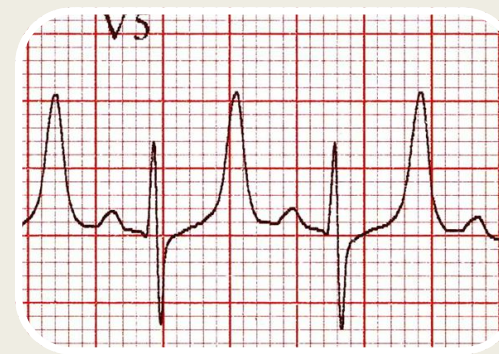
Malignant hyperthermia



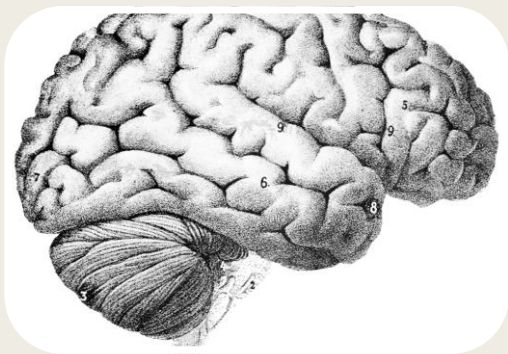
Anaphylaxis



Suxamethonium Apnoea



Hyperkalaemia



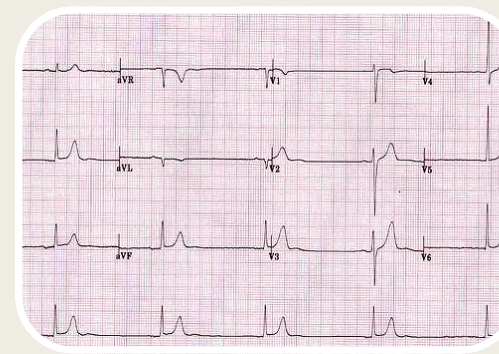
Raised ICP/IOP



Rash



Muscle Pain



Bradycardia

Criteria for inclusion

- CENTRAL, MEDLINE, EMBASE
- Randomised controlled trial (RCT) and controlled clinical trial
- Intubation score
- Rocuronium > $0.6\text{mg}^{-1}\text{kg}^{-1}$
- Suxamethonium > $1\text{mg}^{-1}\text{kg}^{-1}$
- 5 reviewers in total
- 2 reviewed each paper (a third in the case of disagreement)

Trials included

- 66 trials
- 50 trials included
- 45 adults; 5 paediatric
- 4151 participants



Goldberg Score

Score	Laryngoscopy conditions	Vocal Cords	Intubation response
1	Good	Open	None
2	Fair	Open	Diaphragmatic movement
3	Difficult	Movement	Moderate cough
4	Poor	Closed	Severe coughing or bucking

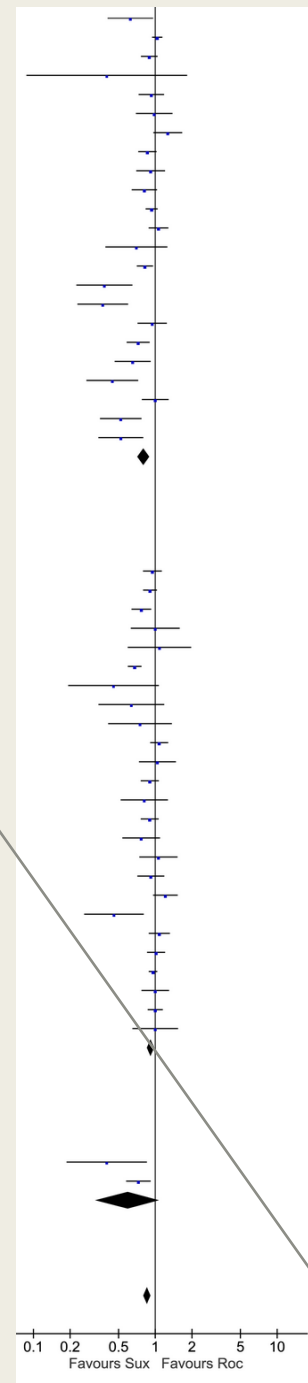
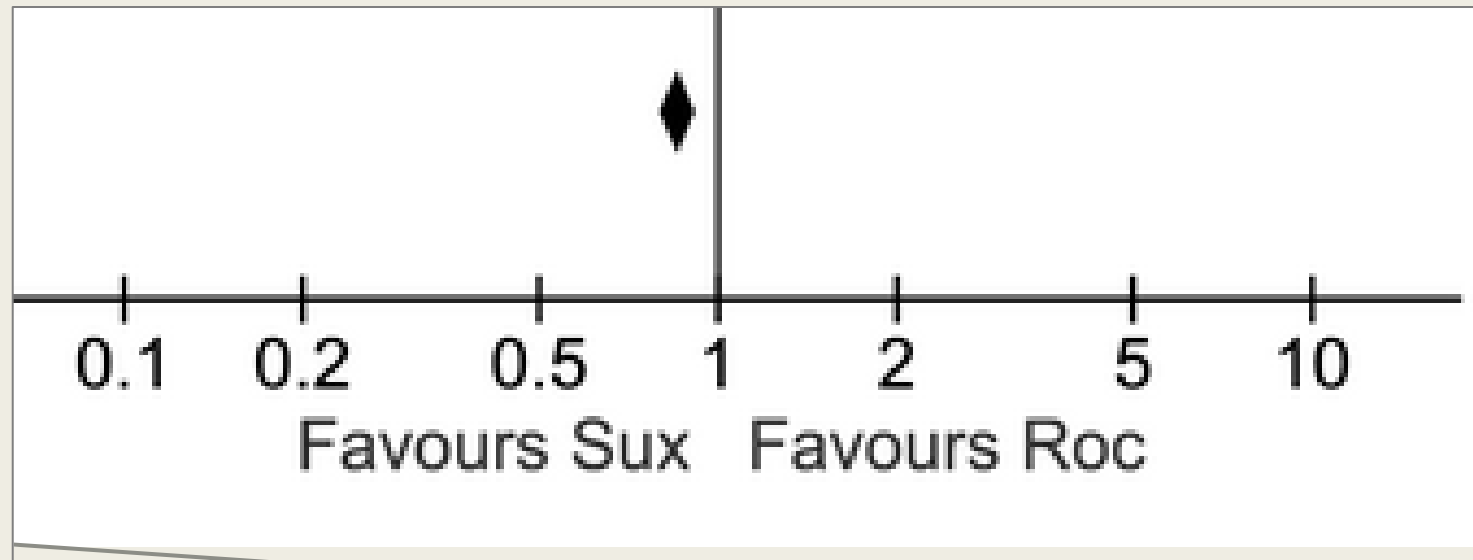
	Excellent	Good	Fair	Impossible
Score	3	4-6	7-9	10-12

Results - all

Primary outcome	• Excellent
Risk Ratio	• 0.86 (favours sux)
95% CI	• 0.81-0.92
I ²	• 72%

Forest plot

All



Results - all

Primary outcome	• Excellent
Risk Ratio	• 0.86 (favours sux)
95% CI	• 0.81-0.92
I ²	• 72%

Results – standard RSI

Primary outcome

- Excellent

Risk Ratio

- 0.80 (favours sux)

95% CI

- 0.72-0.89

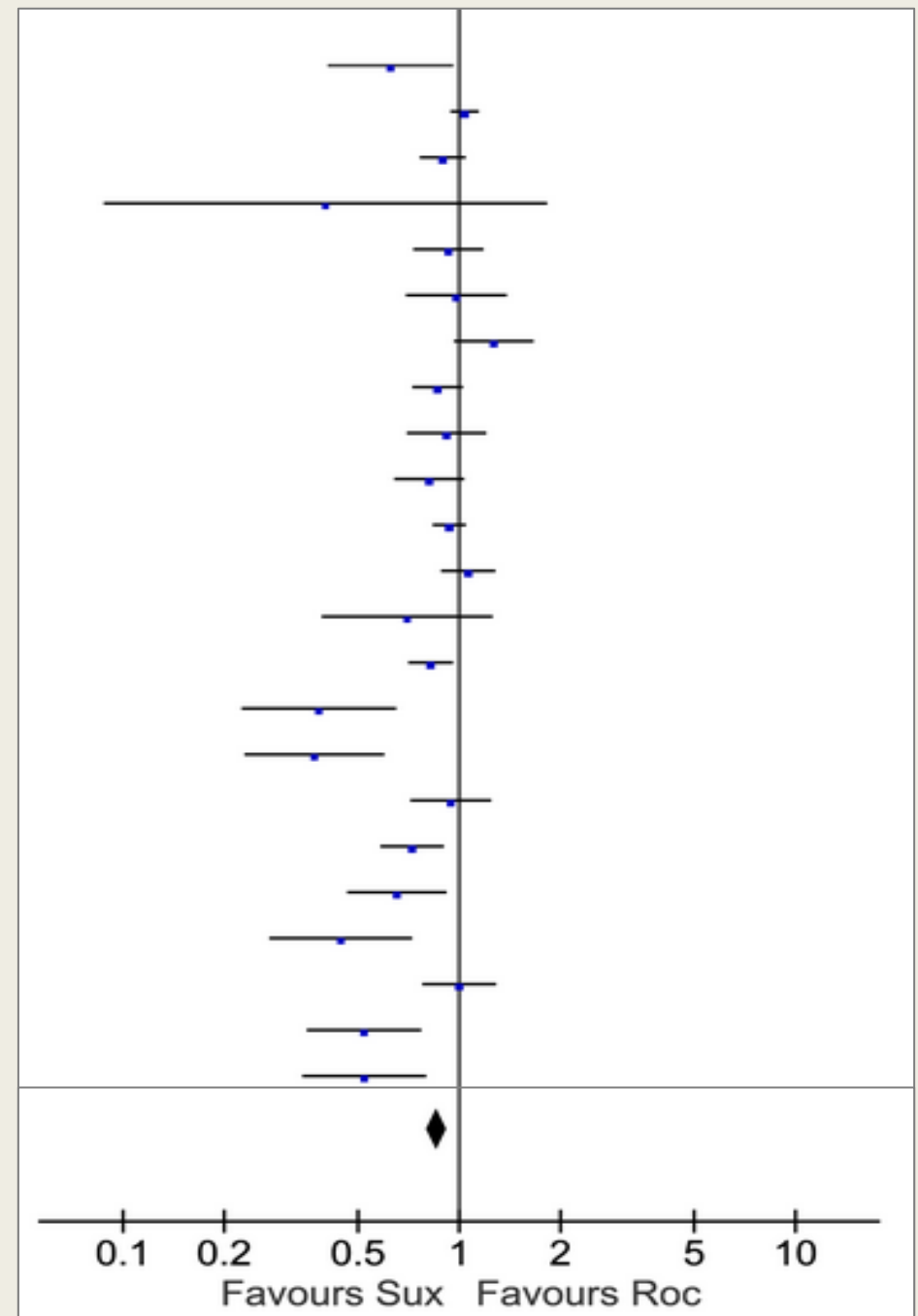
I^2

- 77%

Sample size

- 23 studies
- 2325 participants

Forest plot Standard RSI



Results – modified RSI

Primary
outcome

- Excellent

Risk Ratio

- 0.92 (favours sux)

95% CI

- 0.85-0.99

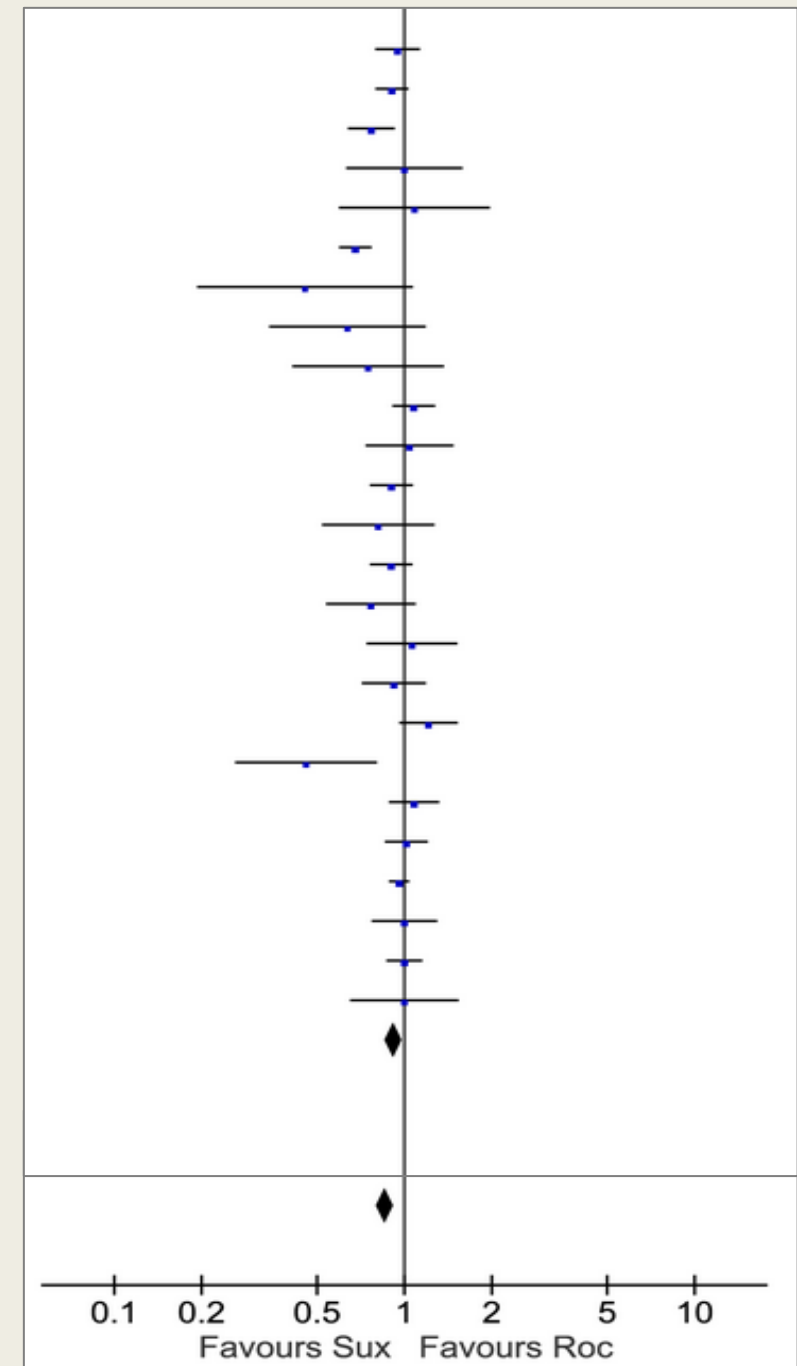
I^2

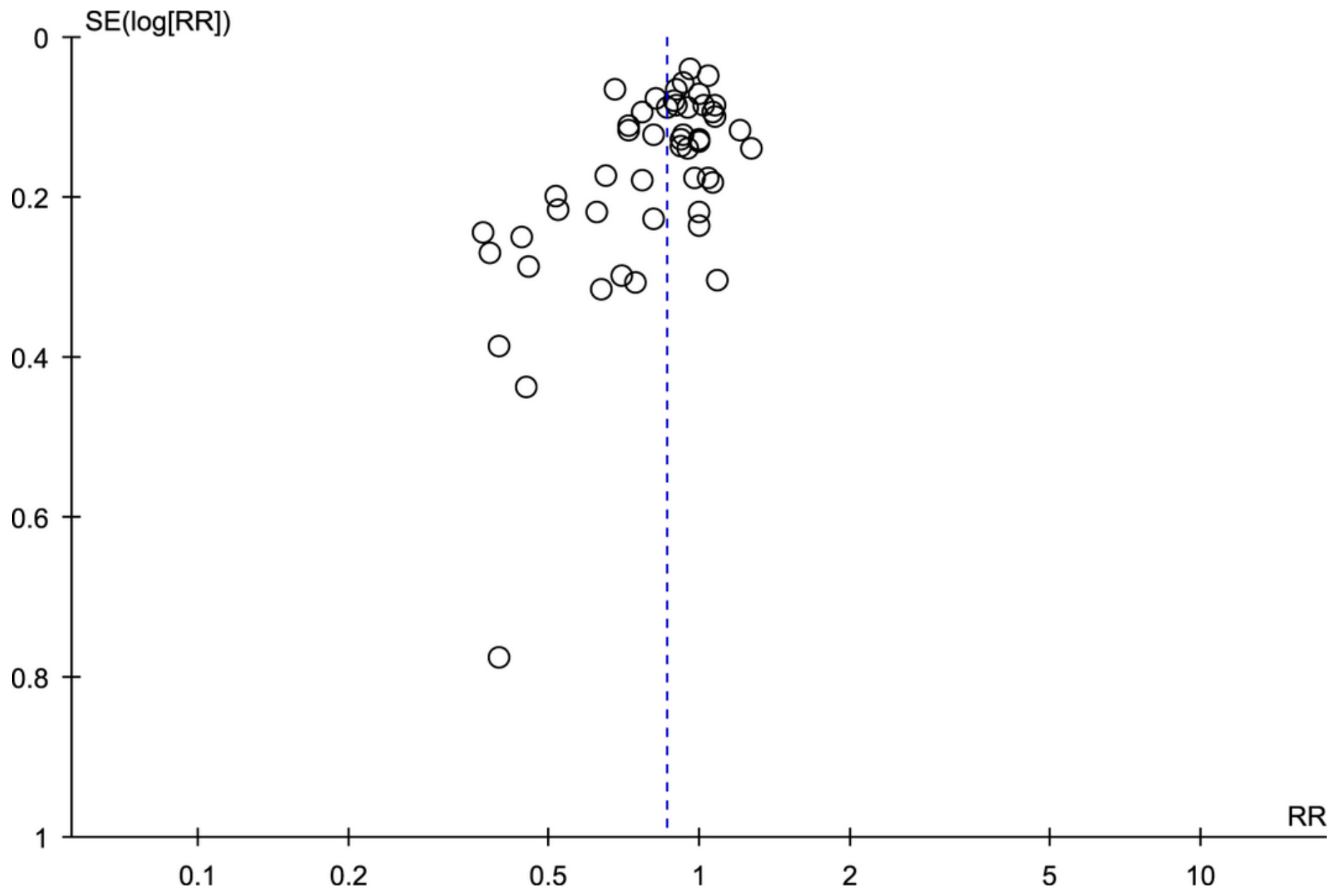
- 60%

Sample
size

- 25 studies
- 1468 participants

Forest plot Modified RSI





Results – propofol

Primary
outcome

- Excellent

Risk Ratio

- 0.92 (favours sux)

95% CI

- 0.84-1.01 (equivocal)

I^2

- 58%

Sample
Size

- 22 studies
- 1849 participants

Results – thiopentone

Primary
outcome

- Excellent

Risk Ratio

- 0.81 (favours sux)

95% CI

- 0.73-0.88

I^2

- 81%

Sample
size

- 28 Studies
- 2302 participants

Results – rocuronium 0.6-0.7 mg⁻¹kg⁻¹

Primary outcome	• Excellent
Risk Ratio	• 0.81 (favours sux)
95% CI	• 0.73-0.88
I ²	• 81%

Other results

- No difference between rocuronium $1\text{mg}^{-1}\text{kg}^{-1}$ and suxamethonium for acceptable (excellent or good) intubating conditions
- Opioid and non-opioid groups favoured suxamethonium
- Emergency participants favoured suxamethonium (5 studies, 1 ICU, 4 in theatre)
- Paeds – no difference between rocuronium and suxamethonium (RR 0.86 (0.7-1.06), 5 studies, 536 participants, I^2 81%)

Limitations

- Heterogeneity
- Blinding
- Possible lack of small trials favouring rocuronium
- No mention of suxamethonium v rocuronium $1\text{mg}^{-1}\text{kg}^{-1}$ for excellent conditions
- No analysis of side-effect profile of suxamethonium

Recommendations

- Use suxamethonium
- BUT...
 - *Moderate quality due to heterogeneity*
 - *rocuronium $1\text{mg}^{-1}\text{kg}^{-1}$ acceptable alternative*

Any questions?