# Episode 120: Lightning Round 1

On this episode: Dr. Jed Wolpaw

In this first ever ACCRAC lightning round I take the contribution and advice of Andrew Salai, a med student in Brazil, and do some rapid fire review of high yield topics. If you have some factoids you'd like to contribute to a future lightning round send them to accrac@accrac.com.

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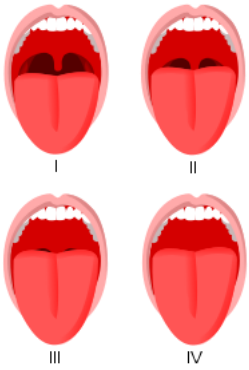
Hyperlinks to section of notes.

## What are four possible classes of Mallampati classes?




- Class I Soft palate, uvula, fossa, pillars
- Class II Soft palate, majority of uvula, fossa
- Class III Soft palate, base of uvula
- Class IV Hard palate only

## Cormack-Lehane classification system?

- Grade 1 Full view of glottis
- Grade 2a Partial view of glottis
- Grade 2b Only posterior extremity of glottis seen or only arytenoid cartilages
- Grade 3 Only epiglottis seen
- Grade 4 Neither glottis nor epiglottis seen
- Of note, classification system created in 1984, and later modified to include 2a/b in 1998

## Factors most influential on speed of induction of volatile anesthetic?

- Faster induction:
  - more insoluble
  - higher delivered concentration
  - higher minute ventilation
  - lower cardiac output

## Which gas has highest vapor pressure?

- Nitrous oxide

## What happens if you take variable bypass vaporizer to altitude?

- Output calibrated at altitude, will deliver more or less same concentration
  - 2% isoflurane will get double molecules, but 2% of lower atmospheric pressure so about the same total output

## What about Desflurane vaporizer to altitude?

- Underdosed because will deliver percent of atmospheric pressure

## What happens from rapid increase of Des but not necessarily other volatile agents?

- Hypertension, tachycardia

## Which opioid has shortest context-sensitive half-time? Why?

- Broken down by nonspecific tissue esterase throughout body
- Phenomena of when infusion run, the half-time is time it takes to reach half of concentration when infusion is shut off

## Which IV induction agent known for hemodynamic stability?

- Etomidate due to direct depressant effect balanced by release of catecholamines. If none to release, will be predominantly depressant

- Notable adverse effect of adrenal suppression

## What induction agent doesn't cause respiratory depression?

- Ketamine (except at very high doses)

## How to reverse opioids?

- Naloxone – IV
  - From overdose, full vial of 400 mcg
  - After case from not waking up, 20-40 mcg at a time
- Naltrexone – PO
- Also partial agonists/antagonists

## How to reverse benzodiazepines?

- Flumazenil
- Careful on chronic users because can cause seizures

## How are muscle relaxants classified?

- Depolarizing (succinylcholine)
- Nondepolarizing
  - Aminosteroids (rocuronium, vecuronium)
  - Tetrahydroquinolines (atracurium, cisatracurium)

## Unique about Cisatracurium?

- Broken down by Hoffman elimination
- Common misconception: doesn't need to be reversed. It does!

## Adverse effect of succinylcholine to keep in mind?

- Hyperkalemia, especially in patients with denervated areas, eg stroke, bedbound, muscular dystrophies
- Transient rise in K
- Elevated intraocular, intracranial pressures
- Trigger for malignant hyperthermia

## How to reverse neuromuscular blockade?

- Classic: neostigmine (acetylcholine inhibitor) to flood and outcompete receptor
- Don't want this effect receptors in heart, so balance with antimuscarinic (glycopyrrolate, atropine, edrophonium) which doesn't affect nicotinic receptors that you're trying to reverse
- Sugammadex
  - if 2 twitches, 2mg/kg
  - if 1 twitch, 4mg/kg
  - if 0, get post-tetanic twitches
    - if at least 2, can still dose at 4mg/kg
    - if less than 2, wait or give 16mg/kg
  - Adverse effects: anaphylaxis, potential bradycardia, interfere with oral contraceptives

## Criteria for extubation?

No clear criteria, but in general:

- Awake, following commands, demonstrate fully recovered strength

- Tested recovery with **qualitative** monitor or fully reversed and demonstrated recovery afterwards
- -25 negative inspiratory force, TV 5ml/kg, VC 10ml/kg, Rapid Shallow Breathing Index < 105
- Acid base normal, controlled bleeding, no reason to suspect airway swelling (leak test found not to be very helpful)
- Adequate oxygenation (on FiO2 40% or less) and ventilation (minimal support such as pressure 5mmHg or less)

## Best sedative for ICU use?

- Dexmedotomidine, least or even preventative of delirium
- Use as adjunct such as with benzodiazepines

## Lung protective ventilation?

- ARDS: TV 6ml/kg of Predicted Body Weight
- Intraoperative: 6-8ml/kg

## What do you think about Lightning Rounds? Send more factoids in!

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*Notes by Brian H Park, MD*