

Epidural Adjuncts

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Introduction

- History of regional anaesthesia
- Drugs
 - LAs
 - Adrenaline
 - Bicarbonate
 - Opiates
 - Clonidine
 - Ketamine
- Summary

History of Regional Anaesthesia

- Corning
- Quinke & Bier
- Pagés
- Dogliotti & Crawford
- Lemmon & Love
- Tuohy
- Hassan & Roberts



James T. Corning M.D.



History of Regional Anaesthesia

- Corning
- Quinke & Bier
- Pages
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- Corning
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Epidural Adjuncts

- Adrenaline
- Bicarbonate
- Opiates
- Clonidine
- Ketamine
- Midazolam
- Neostigmine
- Magnesium
- Droperidol
- Ketorolac
- Potassium

Epidural Adjuncts

● Adrenaline	24
● Bicarbonate	7
● Opiates	75
● Clonidine	55
● Ketamine	67
● Midazolam	1
● Neostigmine	
● Magnesium	
● Droperidol	
● Ketorolac	
● Potassium	

Local Anaesthetics

- For short effect
 - Lignocaine
- For longer duration
 - Bupivacaine
 - Levobupivacaine
 - Ropivacaine

Adrenaline

- Action
 - Prolongs duration of action of block (lignocaine)
 - Improves quality of block
 - Assesses placement of catheter
- Dose
 - 5 μ g/ml (conc 1:200000)
- Side effects
 - Arrhythmia, ischaemia, hypertension, ?increases neurotoxicity of other drugs

Bicarbonate

- Action
 - Decreases time to onset of block (50%)
 - Increases duration of block (20%)
- Dose
 - 1ml 8.4% NaHCO₃ in 10ml LA (aiming for pH 7.25)
- Side effects
 - Minimal

Opiates

- Action
 - Synergistic effect with LA
 - Fentanyl
 - Diamorphine
 - Morphine
- Dose
 - Fentanyl - 1 μ g/ml bolus or 4 μ g/ml infusion
 - Diamorphine - 30 μ g/ml
 - Morphine - 50 μ g/ml
- Side effects
 - Resp depression, CNS depression, nausea, pruritus, constipation, urinary retention

Clonidine

- Action
 - Prolongs duration of block (100%)
 - Reduces opiate requirements (50%)
- Does it work?
 - With LA yes
 - No benefit with LA+opiate
- Dose
 - 1-2 μ g/kg
- Side effects
 - Sedation, hypotension, bradycardia, resp depression

Ketamine

- Action
 - Improves quality of block
 - Increases duration of block
- Does it work?
 - In conjunction with opiates
- Dose
 - 0.5 μ g/kg
- Side effects
 - Neurotoxicity

Midazolam

- Action
 - Reduces analgesic requirements (50%)
- Does it work?
 - In conjunction with opiates or LA
- Dose
 - 50 μ g/kg
- Side effects
 - Sedation, neurotoxicity

Neostigmine

- Action
 - Slightly improves block with LA
 - Reduces duration of post-op ileus
- Does it work?
 - Yes
- Dose
 - 0.5-2 μ g/kg
- Side effects
 - Nausea and vomiting

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- Adrenaline
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- Opiates
- Clonidine
- Ketamine
- Midazolam
- Neostigmine
- Magnesium
- Droperidol
- Ketorolac
- Potassium

What to do???

- Keep it simple
 - LA ± opiate or clonidine
- Avoid
 - Ketamine
 - Ketorolac
 - Single shot epidurals