Epidural Analgesia

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What about epidurals

- Represent the gold standard of pain relief after thoracic and abdominal surgery
- Evidence suggests the most significant improvements in outcome are seen where epidurals are used instead of systemic opiates. Eg Enhanced Recovery Pathway
- Can be managed in a ward setting with sufficient education.
Promises of epidural analgesia

- Mortality
- Morbidity
  - Cardiovascular
  - Respiratory
  - Coagulation
  - Major infections
- Quality of pain relief
- Hospital costs
Effect of neuroaxial blockade on postoperative mortality within 30 days of randomisation (Rodgers 2000)

<table>
<thead>
<tr>
<th>Study</th>
<th>NB Deaths</th>
<th>NB Patients</th>
<th>No NB Deaths</th>
<th>No NB Patients</th>
<th>Odds Ratio (95% CI)</th>
<th>Odds Reduction (SE)</th>
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<tbody>
<tr>
<td>Borovskikh (1990)</td>
<td>2/50</td>
<td>9/50</td>
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<td>Davis (1981)</td>
<td>5/64</td>
<td>7/68</td>
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<td>Davis (1987)</td>
<td>17/265</td>
<td>16/284</td>
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<td>McKenzie (1984)</td>
<td>8/75</td>
<td>13/75</td>
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<td>McLaren (1982)</td>
<td>4/56</td>
<td>16/60</td>
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<td>Reinhart (1989)</td>
<td>3/35</td>
<td>7/70</td>
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<td>Valentin (1986)</td>
<td>17/281</td>
<td>24/297</td>
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<td><strong>Subtotal</strong></td>
<td>71/1334</td>
<td>100/1158</td>
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<td>33% (13)</td>
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9 trials with at least 10 deaths per trial

132 trials with fewer than 10 deaths per trial

| Subtotal                | 32/3537   | 44/3530     |              |                |                    | 27% (20)            |

**Total**                 | 103/4871  | 144/4688    |              |                |                    | 30% (11)            |
NNT

NNT to prevent one episode of respiratory failure with epidural analgesia is 15

NNT to achieve 50% reduction in moderate to severe pain with ibuprofen 200mg is 2
Implementation of an epidural service
Epidural Infusion/PCA
Epidural solutions

- 0.1% Bupivacaine plus fentanyl 2mcg/ml
- Plain 0.1% Bupivacaine

- Epidural PCEA

- Bolus given by midwives
Mr Jones will undergo a thoracotomy. What would be your analgesia of choice?
EPIDURAL TOP UP PLAN FOR ADULTS

NB: Standard Epidural Solution = Fentanyl 2mcg/ml in Bupivicaine 0.1%

EPIDURAL NOT WORKING – PATIENT COMPLAINS OF PAIN

- CHECK PUMP IS WORKING
- LOOSE CONNECTION & CATHETER LEAKS
- CATHETER DISPLACED
- ASSESS THE BLOCK – USE ICE OR ETHYL CHLORIDE

YES

SOME SENSORY BLOCK

BUT NOT COVERING WOUND
Top-up 5-15ml of standard epidural solution DEPENDING ON LEVEL OF BLOCK
And reassess in 30-40 minutes

PATCHY/UNILATERAL BLOCK
Consider:
- Withdraw catheter by 1-2cm
- Change position of patient

Top up with 10-15ml standard epidural solution And reassess in 30-40 minutes

YES

ADEQUATE BLOCK LEVEL

NO

NO BLOCK
Top up with 10ml 0.25% Bupivacaine, and reassess in 30-40 minutes

YES

ADEQUATE BLOCK LEVEL

NO

Increase epidural infusion by 30% up to 20ml/hour

YES

NO

Consider:
- reinsertion of epidural
- PCA

Increase epidural infusion by 30% up to 20ml/hour*
Cautionary Tales

- Dural puncture
- Epidural haematoma
- Epidural abscess
- Failure of technique
- Training
- Resource restraint
Epidural analgesia as a preemptive strategy

- Systematic review showed significantly improved pain immediately postoperative, but only a trend to long term reduction of chronic pain $1.32 (95\% \text{ CI } 0.76-2.3)$

- Acute pain predicts long term pain (Katz et al 1996)

- Similar story with phantom limb pain (Bach vs Jensen)
Epidural analgesia

- Remains controversial
- When to start it
- What to do about heparin
- Relative risks and benefits
- RCA audit.
Conclusion
Epidural Analgesia

- Effective in relieving severe pain
- Effective in mobilising the patient early
- Requires skill and training to be safe
- Serious complications have to be recognised
specialists in pain
international network

“promoting best practice through education and cultural exchange”

www.info@painspecialists.org.uk