Lignocaine or bupivacaine for digital ring block

Report by Andrea Gorzack, Clinical Fellow
Search checked by Mohammed Al Zarrad, Research Fellow

Clinical scenario
A 40 year old female sustains a 2 cm laceration to her left index finger. There was no tendon/neurovascular damage. Would lignocaine or bupivacaine ring block provide better analgesia for repair by suturing.

Three part question
In [patients with conditions affecting the finger that require minor operative intervention] is [lignocaine ring block better than bupivacaine ring block] in terms of [speed of onset of analgesia, reducing pain during procedure, and duration of analgesia].

Search strategy
Medline 1966 to 4/98 using the OVID interface. ([exp nerve block OR ring block ti,ab,sh] AND [exp finger injuries OR exp fingers OR digital injury ti,ab,sh]) AND ([exp lidocaine OR lignocaine ti,ab,sh] AND [exp bupivacaine OR marcain ti,ab,sh])

Search outcome
Four papers found of which two were irrelevant; the remaining papers are shown in table 2.

Comment
The UK study revealed a longer time of onset and longer duration of action for bupivacaine 0.5%. There was no difference in effectiveness while the blocks were working but 25% of the lignocaine blocks had to be repeated before the procedure was completed. The US study reveals no advantage for a lignocaine/bupivacaine mixture over bupivacaine alone.

Clinical bottom line
Bupivacaine or another long acting local anaesthetic agent should be used for ring block if there is any chance that procedures may be anything other than brief.

Table 2

<table>
<thead>
<tr>
<th>Author, date, and country</th>
<th>Patient group</th>
<th>Study type (level of evidence)</th>
<th>Outcomes</th>
<th>Key results</th>
<th>Study weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reich and Quinton, 1987, UK</td>
<td>53 adult (16-70 years) requiring operative procedures on fingers Lignocaine 1% v bupivacaine 0.5% PRCT</td>
<td>Mean time to complete anaesthesia</td>
<td>5.8 min</td>
<td>11.2 min</td>
<td>476 min</td>
</tr>
<tr>
<td>Valvano and Leffler, 1996, USA</td>
<td>19 adult volunteers (acted as their own controls) Lignocaine 1%v bupivacaine 0.25% v bupivacaine 0.25% alone PRCT</td>
<td>Pain score comparison between types of blocks Mean time to complete anaesthesia</td>
<td>No difference</td>
<td>No difference (5 min v 5.35 min)</td>
<td>2 subjects failed to complete study Normal subjects</td>
</tr>
</tbody>
</table>

PRCT = prospective randomised controlled trial.

Steroids in lateral epicondylitis

Report by Simon Carley, Clinical Fellow
Search checked by Kevin Mackway-Jones, Consultant

Clinical scenario
A 45 year old man presents to the accident and emergency department with a two day history of a painful left elbow. He admits to undertaking a lot of gardening in the previous three weeks. Clinical examination reveals tenderness over the lateral humeral epicondylose and pain on resisted extension of the wrist. A clinical diagnosis of lateral epicondylitis is made. The patient is anxious to return to work and has heard that an injection can cure him.

Three part question
In [patients presenting with an acute lateral epicondylitis] does [a local injection of corticosteroid] [reduce pain and improve time to recovery]?

Search strategy
Medline 1966 to 4/98 using the OVID interface. ([exp tennis elbow OR epicondylitis ti,ab,sh] AND [exp steroids OR steroid$ ti,ab,sh OR exp adrenal cortex hormones OR corticosteroids ti,ab,sh]) LIMIT to [english AND human])

Search outcome
Thirty seven papers identified of which two were meta-analyses. The paper by Assendelft et al incorporates all 11 of the prospective randomised controlled trials (PRCTs) from the paper by Labelle et al. The paper by Labelle et al concluded that the available trials were of insufficient quality to conduct a formal meta-analysis; trial quality was taken into account in the paper by Assendelft et al. The paper by Labelle et al was therefore discarded.
after critical appraisal; the paper by Assendelft et al is shown in table 3.

Comment
This is a well written paper that looks at PRCTs relating to the treatment of lateral epicondylitis. The authors have drawn tentative conclusions from studies, which they have identified as being methodologically weak. However, they take this into account in their analysis and show that both high and low quality papers draw similar conclusions. There was no attempt to look at unpublished data in this paper and it is therefore subject to publication bias. The papers examined are quite heterogeneous. Five studies compare steroids against placebo, two compare different regimens of corticosteroid, and the rest compare against the local normal practice (for example physiotherapy/ultrasound). The authors are at pains to point out these potential flaws in their work and do not draw unreasonable conclusions from the papers analysed.

Clinical bottom line
At present the time corticosteroid injections in lateral epicondylitis appear to be of benefit in the short term (2–6 weeks). Any long term benefit is unclear.


Table 3

<table>
<thead>
<tr>
<th>Author, date, and country</th>
<th>Patient group</th>
<th>Study type (level of evidence)</th>
<th>Outcomes</th>
<th>Key results</th>
<th>Study weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assendelft, 1996, Holland</td>
<td>12 randomised controlled trials</td>
<td>Meta-analysis</td>
<td>Pain</td>
<td>Pooled analysis indicated short term effectiveness (2–6 weeks) of local corticosteroid injection against control; pooled OR = 0.15 (95% CI 0.10 to 0.23)</td>
<td>Several RCTs analysed are methodologically weak. Methodological scores for reviewed papers varied from 29 to 63 out of 100. Corticosteroid was compared against a variety of different treatments including placebo.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Function</td>
<td>Longer term follow up (&gt;6 weeks) showed no statistical difference between corticosteroid injection and other treatments including placebo (pooled OR 0.73 (95% CI 0.37 to 1.44))</td>
<td>No attempt to identify unpublished (grey) literature.</td>
</tr>
<tr>
<td></td>
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<td>Time to functional recovery</td>
<td>Further analysis of the results, stratifying for methodological quality revealed similar results in high and low quality trials. In the five placebo controlled trials the pooled OR was 0.20 (95% CI 0.11 to 0.36) in favour of therapy.</td>
<td></td>
</tr>
</tbody>
</table>

CI = confidence interval; OR = odds ratio; RCT = randomised controlled trial.

Management of fractures of the neck of the fifth metacarpal

Report by Kevin Mackway-Jones, Consultant
Search checked by Simon Carley, Clinical Fellow

Clinical scenario
A 21 year old man presents on a Saturday morning having been involved in a drunken brawl the night before. He has a painful swollen right (dominant) hand. An x-ray film reveals a fracture of the neck of the fifth metacarpal with some angulation.

Three part question
In a [young adult with] a closed fracture of the fifth metacarpal neck with angulation but no rotational deformity is [active treatment (manipulation and/or casting)] better than early mobilisation] at [reducing deformity and restoring function]?

Search strategy
Medline 1966 to 5/98 using the OVID interface. ([exp metacarpus OR metacarp$] AND exp fractures) AND [fifth ti,ab,sh OR boxer ti,ab,sh OR small ti,ab,sh OR little ti,ab,sh] AND maximally sensitive RCT filter.

Search outcome
Thirty papers found of which 21 irrelevant; the remaining papers are shown in table 4.

Comment
There is no single study that answers the question posed. The evidence available is of variable quality but all points to the conclusion that manipulation and splintage of fourth and fifth metacarpal neck fractures to correct volar angulation is pointless, and that early mobilisation leads to early functional recovery with no apparent increase in residual symptoms. A well designed PRCT examining metacarpal neck fractures alone is warranted.
Towards evidence based emergency medicine: best BETs from the Manchester Royal Infirmary. Steroids in lateral epicondylitis.

S Carley

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