Review: single dose, oral paracetamol reduces moderate to severe postoperative pain


Q Is single dose paracetamol (acetaminophen) efficacious and safe for acute postoperative pain?

METHODS


Study selection and assessment: published, double blind, randomised controlled trials (RCTs) that compared single dose, oral, immediate release paracetamol with placebo for moderate to severe postoperative pain (>30 mm on visual analogue scale [VAS]) in adults and allocated >10 patients to each treatment group. Exclusion criteria: postpartum trials of pain from uterine cramps alone; pain relieved by clinicians, nurses, or carers (rather than patient report); trials <4 hours or no data from 4–6 hours after administration of dose. 2 reviewers independently assessed individual study quality using the 3 item Jadad scale and a consensus score (maximum 5 points).

Outcomes: proportion of patients with ≥50% pain relief at 4–6 hours (based on hourly patient reports over 4–6 h using validated pain scales) and adverse effects.

MAIN RESULTS

47 trials (n = 4186) met the selection criteria. Trials assessed pain after dental surgery (n = 25); elective general, gynaecological, urological, and orthopaedic surgery (n = 12); and episiotomy and Caesarean section (n = 10). Meta-analysis was done using a fixed effects model. Mean proportion of patients experiencing ≥50% pain relief over 4–6 hours was greater in patients who received paracetamol (325, 500, 600/650, 975/1000, or 1500 mg) than in those who received placebo (table). Paracetamol, 975/1000 mg, did not differ from placebo for drowsiness/sleepiness/somnolence, dizziness, nausea, vomiting, or headache.

CONCLUSION

Single dose, oral paracetamol at doses ranging from 325–1500 mg provides ≥50% pain relief of moderate to severe postoperative pain for 4–6 hours, with few adverse effects recorded.

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Table: Single dose paracetamol v placebo for ≥50% pain relief within 4–6 hours after surgery*

<table>
<thead>
<tr>
<th>Dosage of paracetamol</th>
<th>Number of trials (n)</th>
<th>Paracetamol</th>
<th>Placebo</th>
<th>RBI (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>325 mg</td>
<td>1 (100)</td>
<td>69%</td>
<td>43%</td>
<td>60% (10 to 130)</td>
<td>4 (3 to 14)</td>
</tr>
<tr>
<td>500 mg</td>
<td>6 (561)</td>
<td>61%</td>
<td>32%</td>
<td>90% (60 to 130)</td>
<td>4 (3 to 5)</td>
</tr>
<tr>
<td>600/650 mg</td>
<td>19 (1886)</td>
<td>38%</td>
<td>16%</td>
<td>140% (100 to 180)</td>
<td>5 (4 to 6)</td>
</tr>
<tr>
<td>975/1000 mg</td>
<td>23 (2759)</td>
<td>46%</td>
<td>20%</td>
<td>150% (120 to 180)</td>
<td>4 (4 to 5)</td>
</tr>
<tr>
<td>1500 mg</td>
<td>1 (65)</td>
<td>65%</td>
<td>39%</td>
<td>70% (20 to 140)</td>
<td>4 (3 to 10)</td>
</tr>
</tbody>
</table>

*Abbreviations defined in glossary; RBI calculated from relative benefit data in article. 
†Information provided by author.