**Review: ophthalmic non-steroidal anti-inflammatory drugs reduce pain without delaying healing in acute corneal abrasions**


**QUESTION:** In patients with acute corneal abrasions, do ophthalmic non-steroidal anti-inflammatory drugs (NSAIDs) reduce pain without a delay in healing?

**Data sources**

Studies were identified by searching Medline (1966 to April 2002), the Cochrane Database of Systematic Reviews, ACP Journal Club, DARE, and the Cochrane Controlled Trials Registry and by reviewing bibliographies of relevant articles.

**Study selection**

Studies were selected if they were randomised controlled trials (RCTs) that compared ophthalmic NSAIDs with placebo, oral analgesics, or standard therapy in patients with acute corneal abrasions.

**Data extraction**

Data were extracted on sample size, study setting and quality, details of the intervention, and outcomes. The main outcomes included pain intensity (visual analogue scale or Numeric Pain Intensity Scale score) and time to healing.

**Main results**

5 RCTs (397 patients) met the selection criteria. Comparisons included ketorolac 0.5% with a “control vehicle” (1 RCT) or liquid tears (1 RCT), diclofenac 0.1% with normal saline solution (1 RCT) or normal tears (1 RCT), and indomethacin 0.1% plus gentamicin sulphate with gentamicin sulphate only (1 RCT). Reduction in pain intensity was greater in patients treated with ophthalmic NSAIDs than in those treated with control medications (5 RCTs) (table). The difference between groups in pain reduction was ≥13 mm on a 100 mm visual analogue scale (empirically perceived by patients to be a clinically important difference) in only 2 RCTs (table); however, in neither RCT did the 95% CI around the difference exclude a value below this threshold. The groups did not differ for time to healing in 3 RCTs that reported the outcome.

**Conclusion**

In patients with acute corneal abrasions, ophthalmic non-steroidal anti-inflammatory drugs reduce pain without a delay in healing.

**Ophthalmic non-steroidal anti-inflammatory drugs (NSAIDs) v placebo or standard therapy in acute corneal abrasions at 1–24 hours**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Comparisons (1 RCT each)</th>
<th>n</th>
<th>Scale</th>
<th>Difference between groups (95% CI or p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean reduction in pain intensity from baseline</td>
<td>Ketorolac 0.5% v “control vehicle”</td>
<td>100</td>
<td>0–101</td>
<td>1.3 (p&lt;0.002)</td>
</tr>
<tr>
<td></td>
<td>Diclofenac 0.1% v normal saline</td>
<td>40</td>
<td>0–100 mm VAS</td>
<td>NR (p&gt;0.05)</td>
</tr>
<tr>
<td></td>
<td>Indomethacin 0.1% plus gentamicin sulphate v gentamicin sulphate</td>
<td>123</td>
<td>0–100 mm VAS</td>
<td>5.9 (p&lt;0.007)</td>
</tr>
<tr>
<td></td>
<td>Ketorolac 0.5% v liquid tears</td>
<td>86</td>
<td>0–50 mm VAS</td>
<td>2 (p&lt;0.05)</td>
</tr>
<tr>
<td></td>
<td>Diclofenac 0.1% v natural tears</td>
<td>49</td>
<td>0–100 mm NPIS</td>
<td>21 (8 to 34)</td>
</tr>
</tbody>
</table>

*RCT = randomised controlled trial; VAS = visual analogue scale; NPIS = Numeric Pain Intensity Scale scores; NR = magnitude of effect not reported. CI defined in glossary.

3 Weaver CS, Wheeler KM. New York Presbyterian Hospital New York, New York, USA.
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Evid Based Med 2003 8: 176
doi: 10.1136/ebm.8.6.176

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