Methylprednisolone injection improved symptoms for 1 year in patients with the carpal tunnel syndrome


QUESTION: What is the effectiveness of a methylprednisolone injection in patients with the carpal tunnel syndrome?

Design
Randomised (allocation concealed*), blinded (clinician, patient, and outcome assessor),* placebo controlled trial with 1 year follow up.

Setting
Outpatient neurology clinic in a district general hospital in the Netherlands.

Patients
Patients > 18 years of age (mean age 52 y, 83% women) who had signs and symptoms of the carpal tunnel syndrome for ≥3 months confirmed by electrophysiological tests. Patients who had already been treated for the carpal tunnel syndrome were excluded. Follow up was 100%.

Intervention
Patients were allocated to receive a single injection of methylprednisolone, 40 mg, and lignocaine, 10 mg (intervention group, n = 30), or lignocaine, 10 mg, alone (control group, n = 30) proximal to the carpal tunnel. In patients with bilateral symptoms, the arm with the most severe symptoms was included in the study.

Main outcome measures
Symptom improvement was defined as having no symptoms or minor symptoms requiring no further treatment at 1 month. Patients were also evaluated at 3, 6, 9, and 12 months.

Main results
More patients in the intervention group had symptom improvement than did those in the control group at 1, 3, 6, 9, and 12 months (p < 0.01) (table).

Conclusion
In patients with the carpal tunnel syndrome, an injection of methylprednisolone was effective in improving symptoms for up to 1 year.

*See glossary.

Methylprednisolone injection v control for symptom improvement in patients with the carpal tunnel syndrome†

<table>
<thead>
<tr>
<th>Follow up</th>
<th>Methylprednisolone</th>
<th>Control</th>
<th>RBI (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mo</td>
<td>77%</td>
<td>20%</td>
<td>283% (96 to 723)</td>
<td>2 (2 to 3)</td>
</tr>
<tr>
<td>3 mo</td>
<td>63%</td>
<td>7%</td>
<td>850% (185 to 3400)</td>
<td>2 (2 to 3)</td>
</tr>
<tr>
<td>6 mo</td>
<td>57%</td>
<td>7%</td>
<td>750% (152 to 3050)</td>
<td>2 (2 to 4)</td>
</tr>
<tr>
<td>9 mo</td>
<td>53%</td>
<td>7%</td>
<td>700% (136 to 2880)</td>
<td>3 (2 to 4)</td>
</tr>
<tr>
<td>12 mo</td>
<td>50%</td>
<td>7%</td>
<td>650% (119 to 2700)</td>
<td>3 (2 to 5)</td>
</tr>
</tbody>
</table>

†Abbreviations defined in glossary; RBI, NNT, and CI calculated from data in article.

COMMENTARY
This rigorous study by Dammers and colleagues of the benefits of methylprednisolone in the non-surgical management of the carpal tunnel syndrome used a methodologically sound design to show that 1 injection of methylprednisolone may prevent the need for surgical decompression in 43% of patients at 1 year. Injections into the carpal tunnel have traditionally been used as a temporary solution. Previous studies of corticosteroid injections in managing the carpal tunnel syndrome have used an uncontrolled series design. 1 study examined 497 patients who were treated with steroid injections; of these, 14% reported no further symptoms, 12% improved, and 26% eventually required surgery. 1 Another study examined the benefit of injections in 50 hands among 41 patients with a mean follow up of 18 months. At the conclusion of this study, 22% of the 50 hands were free of symptoms. Patients with minimal or intermittent symptoms and negative physical examinations had the highest success rate, whereas patients with persistent numbness or thenar atrophy had the lowest success rate. Yet another study reported that injections gave complete relief of all symptoms in 30% to 40% of patients, with relief lasting from several weeks to 6 months; a further 10% to 20% of patients gained partial benefit from injection, although most of these patients eventually needed surgery. 1 Dammers and colleagues do not report how many patients eventually went on to surgery, but we might assume that the patients who did not respond to steroid therapy became surgical candidates.

Methylprednisolone injection into the carpal tunnel is strictly a one time procedure. Repeated injections carry the risk for tendon rupture and nerve damage. The technique is easily learned but should be mastered through hands on training with an experienced operator.

Herman Weinreb, MD
New York University Medical Center
New York, New York, USA

Methylprednisolone injection improved symptoms for 1 year in patients with the carpal tunnel syndrome

Evid Based Med 2000 5: 52
doi: 10.1136/ebm.5.2.52

Updated information and services can be found at:
http://ebm.bmj.com/content/5/2/52

These include:

References
This article cites 3 articles, 1 of which you can access for free at:
http://ebm.bmj.com/content/5/2/52#BIBL

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Topic Collections
Articles on similar topics can be found in the following collections

- Injury (154)
- Neuromuscular disease (73)
- Peripheral nerve disease (42)
- Clinical trials (epidemiology) (1595)
- Sports and exercise medicine (125)

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/