Author's response to reviews

Title: Surgery is more cost-effective than splinting for carpal tunnel syndrome. Results of an economic evaluation alongside a randomized controlled trial.

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Version: 2 Date: 9 July 2006

Author's response to reviews: see over
Dear Editor,

Journal of Bone and Joint Surgery
22 Buckingham Street, London WC2N 6ET, UK

Amsterdam, March 10, 2005

Dear editor,

Hereby we would like to resubmit our manuscript entitled “Surgery is more efficient than splinting for carpal tunnel syndrome. Results of an economic evaluation alongside a randomized controlled trial” for publication in the Journal of Bone and Joint Surgery. Currently, the evidence of treatment for carpal tunnel syndrome is scarce. The clinical results of this randomized controlled trial have already been published in JAMA (Gerritsen et al. Splinting or surgery for carpal tunnel syndrome: a randomized controlled trial. JAMA. 2002;288:1245-51). The present manuscript includes the economic evaluation that was conducted alongside this trial comparing the cost-effectiveness and cost-utility of splinting with surgery for patients with carpal tunnel syndrome. The authors of the manuscript do not have any conflict of interest. All authors were involved in final approval of the manuscript to be published. Maurits van Tulder, Maureen Rutten–van Mõlken, Henrica de Vet and Lex Bouter were responsible for conception and design of the study. Ingeborg Korthals–de Bos, Annette Gerritsen, Maurits van Tulder, Maureen Rutten–van Mõlken and Herman Adèr were involved in analysis and interpretation of data. Ingeborg Korthals–de Bos, Annette Gerritsen and Maurits van Tulder were responsible for drafting the article and revising it critically.

The article is original, is not under consideration by another Journal, and has not been previously published. We hope that you will consider this article for publication and look forward to your response.

Below you will find a point by point description of our response to the comments of the reviewers.

Yours sincerely, also on behalf of the co-authors,

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Reviewer ah

1) We have changed ‘usually’ into ‘often’.

2) We have changed “There is little evidence ....” Into “One Cochrane review found that a hand brace and carpal bone mobilisation significantly improved symptoms and ultrasound treatment, oral steroid treatment and yoga significantly reduced pain. Another Cochrane review demonstrated clinical improvement of symptoms of carpal tunnel syndrome at one month following local corticosteroid. Two recent systematic reviews confirmed these findings.

3) We have added references to these two recent trials.

4) Cost data were prospectively collected during this study. Patients had to complete four cost diaries covering together the entire follow-up period of 12 months. These diaries were completed by the patients and returned to the research assistant at the hospital. Only 9% of the cost diaries were not returned. Reliability of the data was checked with the patients by the research assistant.

5) Yes, costs of surgery in patients who were randomized to the splinting group are included in the splinting group (according to the intention to treat principle).

6) The costs of open CT release in the Netherlands are low, because the intervention only takes … minutes. Costs of the surgeon, a nurse and the operating room are included in this cost price. We have added the following statement to the discussion section: “Consequently, the results of this study may not be extrapolated to other health care systems in which the costs of surgery would be different.”

Reviewer Robert A Werner

1) We have addressed the reviewer’s concerns about the generalizability in the discussion section and added the following paragraph: “A limitation of this study is that the results may be limited in how they can be applied to other countries in which the costs of surgery would be much higher. The American Academy of Neurology advises treatment of CTS with non-invasive options (e.g. splinting) initially, and OCTR only if non-invasive treatment proves to be ineffective. However, because surgery is much more expensive in the US than in the Netherlands, results of this study cannot be directly extrapolated. Economic evaluations in other health care systems (countries) are recommended.”

2) The reviewer suggests to run a separate analysis excluding patients with long-term sick leave. We do not agree with the reviewer, because these patients are extremely informative if costs are considered. The distribution of costs is typically skewed. Most patients have low costs and only few patients have high costs. Patients with long term sick leave will have high indirect costs of production loss, patients with long hospitalization will have high direct costs. Excluding patients with high costs will be misleading and not provide a reliable estimate of the cost-effectiveness.

3) We agree that these results may not be directly generalizable to other countries (see above) and have therefore changed the final conclusion into: “In the Netherlands, surgery is more cost-effective compared with splinting, and recommended as the preferred method of treatment for patients with CTS.”

Reviewer Vilh Finsen
1. See above. The tariff of the Dutch Central Organization for Health Care Charges was used in this study as proxy for costs of the surgical intervention (Euro 69.50). The real cost price of the surgical intervention might be somewhat higher, but not much higher. The real cost price is based on personnel, material and overhead costs. This intervention is a simple outpatient intervention, the surgeon and nurse don’t spend more than 10-15 minutes to perform the intervention, and material costs are low. Assuming a salary of Euro 200 per hour for the surgeon and 50 for the nurse, the total personnel costs would be Euro 250 / 4 (assuming 15 minutes per intervention), which equals Euro 62.50. So, the tariff of Euro 69.50 may be close to the real cost price. It is important to realize that the costs used in an economic evaluation are the real costs of the intervention and not the price that is paid by either the (public or private) health insurers, the patients or both. Not the prices charged for this intervention, but the real cost price should be included as the costs of the intervention in the economic evaluation. The tariff we used is a good proxy for the real cost price. The prices charged for this intervention in other countries seem much higher than the actual cost price, which indicates that profits are (very) high. We have added this explanation to the discussion section.

2. The reliability of the cost diaries has been evaluated and reported (Goossens et al. The cost diary: a method to measure direct and indirect costs in cost-effectiveness research. J Clin Epidemiol 2000;53(7):688-95). The cost diary is a reliable method for collecting cost data and it is a strength of this study that we had a low drop-out / missing value rate. This was mainly due to the fact that we had an excellent infrastructure for this study and sufficient funding to hire a full-time researcher and two research assistants who helped with data collection.

3. Indeed, patients with CTS in the Netherlands who are surgically treated with open carpal tunnel release leave the hospital the same day and typically return to work the next day. 16 patients in the surgery group and 23 in the splint group returned to work the next day. ….

4. On page 5, we mean i.e., because there were no other out of pocket expenses.

5. We have split the first sentence of the sensitivity analysis paragraph into: “Patients experienced difficulties in specifying the precise number hours of unpaid help. Because of this uncertainty, the influence of this cost-category on the total costs was evaluated.”

6. We do not agree with this reviewer that new information is provided in the discussion section that should be moved to the methods section. The information is used to discuss the results of this study and put them into perspective. Therefore, to our opinion this fits well in the discussion section.

7. The title of Table 2 clearly describes that this table presents data after 12 months and not at baseline. Also, the legenda clearly describe that the table presents difference after 12 months compared to baseline.

8. Table 3 reports the health care utilization. In an economic evaluation, not the difference in health care utilization but the difference in costs is compared. That is why we have reported differences with 95% CI in table 4 and not in table 3.

9. The upper right hand box in figure 1 indeed doesn’t make it clear how many patients refused to continue treatment because of a strong preference. It clearly states how many patients were excluded from the trial because of a strong preference for surgery (n=45) or splinting (n=31).