Author’s response to reviews

Title: A Bayesian network meta-analysis: Comparing the clinical effectiveness of local corticosteroid injections using different treatment strategies for carpal tunnel syndrome

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Reply Respectfully

Reviewer 1 Reply /page

Sentences like “(Ulnar-I) approach was probably the best treatment strategy for clinical response” need to be substantiated by the meta-analysis. Also “Local corticosteroid injections using any of these injection approaches were better than placebo for clinical response” – could the authors include the mean difference 95% CI – these are missing from the abstract. What is the quality of findings – good, poor etc. We added the OR or MD with 95% credible interval in the abstract. The quality of studies is good. /page 4

Some grammatical errors and repetition however, could authors please revise these. We revise grammatical errors and repetition.

Could the authors comment on whether they included participants with varying degrees of carpal tunnel here Participants with mild to moderate degree of carpal tunnel syndrome were included. /page 10
What was the mean duration of symptoms? There was no restriction in the mean duration of symptoms. /page 10

Suggest the authors specify in the inclusion criteria that they included randomised placebo-controlled trials of corticosteroid injections for carpel tunnel syndrome or head to head trials evaluating different corticosteroid injections. “We included randomized placebo-controlled trials of corticosteroid injections for carpel tunnel syndrome or head to head trials evaluating different corticosteroid injections…” /page 10

To simplify the clinical conditions, we restricted the total injection times to 1~2 times.” Could the authors please clarify this point. More symptomatic relief could be reported due to more local corticosteroid injection times. /page 11

Types of outcome measures: what outcome measures were used – were these pain scales such as the VAS, NRS, global recovery or disability outcomes. More specifically what symptom severity scale was used and what functional status scale was used? Clinical response was defined as an symptomatic hand (VAS < 2cm), patients’ satisfaction, or patients’ favorable response after injection. Boston Carpal Tunnel Questionnaire was used to evaluate the symptom severity scale (11 items, total score = 11 to 55) and the functional status scale (8 items, total score = 8 to 40). We defined change in symptom severity scale as SSS at short-term follow-up period minus SSS at baseline (SSS short-term – SSS baseline) and change in functional status scale as FSS at short-term follow-up period minus FSS at baseline (FSS short-term – FSS baseline). /page 12

Were any of the outcome measures converted to a common scale? Yes, Boston Carpal Tunnel Questionnaire (BCTQ) was commonly used to evaluate patients with carpel tunnel syndrome, and its validity and reliability has been proved to be good.

In particular could authors please specify what they mean by clinical response? Clinical response was defined as an symptomatic hand (VAS < 2cm), patients’ satisfaction, or patients’ favorable response after injection. /page 12

I would consider the use of confidence interval rather than credible interval. Also could authors please specify the I2 value? In the traditional pairwise meta-analysis, there is I2 value and we have added the data into the revised manuscript as suggestion. However, in the Bayesian network meta-analysis, no I2 value will be reported. I2 value and 95% confidence interval is the concept that the frequentists usually mentioned in the result. But in Bayesian theorem, the concept of probability is more meaningful. For example, the outcome will be reported by the description “Parameter θ lies in [a,b] with posterior probability x%.” Lu and Ades have created the initial model for Bayesian network meta-analysis in their previous publication “Lu G, Ades AE. Combination of direct and indirect evidence in mixed treatment comparisons. Stat Med. 2004; 23:105-24.”

In order to be able to interpret these results more clearly, there needs to be some description of what outcomes measures were used and whether these were converted to a common scale or not. At present the results are somewhat difficult to follow. What is the change in symptom severity scale and what is the change in functional status scale – these really need to be defined. We
chosen the outcomes (clinical response, change in symptom severity scale, and change in functional status scale) assessed at short-term (before or near 8 weeks) follow-up period from these studies. The clinical response, change in symptom severity scale, and change in functional status scale.

A definition for clinical response is needed to place the findings in better context. Some paragraphs are better suited for inclusion in the results e.g. “After reviewing table 1, we could know that most cases were categorized as chronic carpal tunnel syndrome. However, we could not calculate the effect of this covariate owing to paucity of data. Likewise, various dose, potency, and duration of corticosteroids were used for local corticosteroid injections in many studies and these also served as important covariates, but we could hardly calculate the effects of these covariates.” We defined “clinical response” We moved the paragraphs mentioned here to the subtitle ‘subgroup analysis and meta-regression’.

This section should be revised to emphasise the significance of the findings in light of the outcome measures used. We added the outcome measures “for clinical response, change in symptom severity scale, and change in functional status scale”.

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