Reviewer's report

Title: Image-guided versus blind corticosteroid injections in adults with shoulder pain: A systematic review

Version: 1 Date: 15 February 2011

Reviewer: Christer Rolf

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Review of article 2011 02 15
"Systematic review of image guided versus landmark injection of cortisone in patients shoulder".
This review paper is based on 2/9 chosen articles which fulfilled criteria as set by the authors.
The methodology used and data seem sound, but the authors have not scrutinized the chosen articles in such detail as one would expect, given the limited information available, and therefore conclusions made are not correspondingly critical.

Firstly the authors conclude that there were no significant differences in the adverse outcomes between the groups. Despite that, they conclude in Abstracts and Discussion that there were “more” side effects in the landmark group. This is not acceptable. You choose a significance level and stick to it. Either there is a difference or not, and in this case the conclusion must be changed. This is more humbly presented at the end of discussion than in Abstract where it is clearly misleading.

Secondly, it is not sound to conclude firmly from these two studies that the clinical outcome of image guided injections is better than landmark injections for a number of reasons and vaguely defined diagnoses. This will mislead the reader. Again, the text is more humble at the end of Discussion but less so in Abstracts.

Why do the authors not make a strong note of the obvious lack of firm evidence based data in the literature on this subject and make their conclusion related to that fact, expressing more clearly the limitations of available evidence at hand. There are several reasons for this rationale.

Firstly the clinician who injected the shoulders at least in one article was most likely a clinical radiologist, not an orthopaedic shoulder surgeon or experienced rheumatologist. Clinical experience is very important to inject successfully and clinical radiologist mainly do guided injections, no offence to the radiologists in these two studies who may or may not be trained differently. Please comment.

What I could see the first article is published by a radiologist and an epidemiologist. I question the experience and skills by any of these to undertake landmark injections. Please comment also on the second article in this regard, I
believe the clinician giving the injections was Radiologist as well?
The patients were not blinded in any of the studies, and the indicating diagnosis is not clear, neither is the investigations undertaken to reach these diagnoses.
The data on pain and function are not presented before and after treatment in real terms but are provided in the originals. Were symptoms matched between the groups? How were the patients matched/randomised before injection? Please provide that data.
RoM before and after was not presented here but provided in the originals. Please provide that data. Where the groups matched for reduction in RoM before injection? If an injection is used and successful for a stiff shoulder which has not been used for a while, pain may actually stay or decrease less but function/movements improve and patient’s subjective assessment is affected either way. Thus, diagnoses, indications for the injections are important. Please provide such data.
I believe that this article poorly highlight the main finding which in my view is the lack of evidence based data in the literature; there is no prospective blinded study where an experienced orthopaedic shoulder surgeon or similar compare his/her land mark injections with an experienced clinical radiologists US guided injections, both injections monitored afterwards by US to check the position of injected substance, with comparable indications (not just shoulder pain as given as explanation) and the need for such larger blinded prospective study.

With the lack of such controlled study clinical outcomes based on where injections are assumed to have been localised on vague defined diagnoses is pure guesswork.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I do not have any competing interests