Reviewer’s report

Title: Predictors of the effects of treatment for shoulder pain: Protocol of an individual participant data meta-analysis

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Reviewer: Setor Kunutsor

Reviewer's report:

The authors plan to conduct an individual participant data (IPD) meta-analysis of trials to evaluate the predictors of the effect of commonly used treatment strategies for shoulder pain. The authors have done previous work in this area and outcome measures they propose include shoulder pain intensity and function. The authors propose using a one-stage IPD meta-analysis to examine the effect of treatment-predictor interaction on outcome for each of the candidate predictors and assess for subgroup effects. Sensitivity analyses will include a two-stage meta-analysis. The authors have appropriately registered this protocol in the PROSPERO database.

The protocol is well written and statistical approaches seem appropriate.

Indeed, an IPD meta-analysis addresses most of the limitations of aggregate data such as inconsistent definitions of some data and allows more detailed statistical analyses and a consistent approach to pooling. My main concern is how do the authors propose to standardize the data to enhance a consistent approach to the pooling, given that the intervention/control arms and outcome measures are not consistent across trials?

In their first objective, the authors state that "To estimate the overall effects of these four treatments, when compared to a control intervention (no treatment, advice and analgesics only; or sham), or when directly compared against each other" Are the authors proposing to lump these four treatments as one intervention? Corticosteroid injection, physiotherapy-led exercise, psychological treatments, and surgical interventions are different treatment strategies and even within each of these strategies, there are different interventions. The authors will need to clarify this properly. The authors state "Attempts will be made to convert variables to the same scale for all studies." This also needs to be expanded upon.

Have there been any initial contact with potential investigators and if they will be willing to share their data? This is very relevant and needs to be clarified. How many investigators have agreed to share their data?

Are there plans to contact investigators for unpublished data and any ethical approval issues involved?
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