INPLASY PROTOCOL

To cite: Para-García et al. Dry needling alone or in combination with exercise therapy for reducing pain and disability in subacromial impingement syndrome: a systematic review and meta-analysis. Inplasy protocol 202260112. doi: 10.37766/inplasy2022.6.0112

Received: 29 June 2022

Published: 29 June 2022

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Support: **No external funding.**

Review Stage at time of this submission: **Data analysis.**

Conflicts of interest:
None declared.

Dry needling alone or in combination with exercise therapy for reducing pain and disability in subacromial impingement syndrome: a systematic review and meta-analysis

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Review question / Objective: **Can dry needling alone or in combination with physical exercise reduce the pain of subacromial pain syndrome?**
Condition being studied: **Subacromial pain syndrome is one of the most frequent causes of shoulder pain in the clinic. The shoulder area is one of the most complicated to treat manually due to the flat musculature and its location. That is why the aim of this study is to evaluate whether dry needling alone or in combination with therapeutic physical exercise can reduce this pain.**
Eligibility criteria: **Patients with subacromial pain syndrome; dry needling treatment, controlled by means of a group in which deep dry needling is not applied or this in combination with therapeutic physical exercise; pain measurement by means of VAS, NPRS, CMS, DASH or SPADI; randomized clinical trials.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 29 June 2022 and was last updated on 15 July 2022 (registration number INPLASY202260112).

INTRODUCTION

Review question / Objective: **Can dry needling alone or in combination with physical exercise reduce the pain of subacromial pain syndrome?**

Condition being studied: **Subacromial pain syndrome is one of the most frequent causes of shoulder pain in the clinic. The shoulder area is one of the most complicated to treat manually due to the flat musculature and its location. That is why the aim of this study is to evaluate whether dry needling alone or in combination with therapeutic physical exercise can reduce this pain.**

METHODS

Participant or population: Persons diagnosed subacromial pain syndrome.

Intervention: Application of deep dry needling alone or in combination with therapeutic physical exercise.

Comparator: In the comparison with dry needling alone, the control group was anyone who was not treated with deep dry needling. In the comparison of dry needling with therapeutic physical exercise, the control group was any type of intervention that did not use the combination of both.The control group was anyone who received a treatment other than dry needling alone or in combination with therapeutic physical exercise.

Study designs to be included: We will include RCTs in which dry needling alone or in combination with physical exercise is used to treat subacromial pain syndrome.

Eligibility criteria: Patients with subacromial pain syndrome; dry needling treatment, controlled by means of a group in which deep dry needling is not applied or this in combination with therapeutic physical exercise; pain measurement by means of VAS, NPRS, CMS, DASH or SPADI; randomized clinical trials.

Information sources: We Will use 5 databases to search all relevant literature resources: Pubmed, IBECS, CENTRAL, Web of Science Core Collection and SCOPUS.

Main outcome(s): The outcome measures we focused on included pain scales (VAS, NPRS) , and disability questionaries (CMS, DASH, SPADI).

Quality assessment / Risk of bias analysis: To assess the bias, we will use the RIOB assessment tool of Cochrane, that includes 7 items: allocation hiding; random method selection; completeness of the result data, blind method, whether the evaluator is blind; selectively reporting results and other biases. The options of response are yes, no and unclear.

Strategy of data synthesis: DerSimonian and Laird method. Forest plots were created to graphically represent the results of each study on the outcomes included with the corresponding 95% CI. For this purpose, standardized mean differences (SMD) and 95% CI were calculated for each study. The pooled effect size for SMD was classified as small (0-0.20), medium (>0.20 to 0.50), or large (>0.50). Additionally, when a study performed outcome assessment at multiple time-points of follow-up, these time-points were combined into a single effect size and included in the analysis as only once. Inconsistency among clinical trials was assessed by I2 statistic which may be interpreted with caution as not important (< 40%), moderate (40-60%), substantial (60-75%), and considerable (75-100%) [7]. All statistical analyses were performed with the statistical program STATA SE, version 15 and the level of statistical significance was set at $p < 0.05$.

Subgroup analysis: Not applicable.

Sensitivity analysis: There is not sensitivy analysis.

Country(ies) involved: Spain.

Keywords: Dry Needling; Shoulder Impingement Syndrome; Exercise Therapy; Trigger Points.

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