

INPLASY PROTOCOL

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None declared.

INTRODUCTION

Review question / Objective: To establish the effectiveness of physiotherapy techniques for pain treatment and functionality in patients with Complex Regional Pain Syndrome.

Rationale: Complex Regional Pain Syndrome (CRPS) is a chronic condition characterized by causing spontaneous or

Effectiveness of physical rehabilitation methods for pain treatment and disability in patients with Complex Regional Pain Syndrome. A Systematic review and meta-analysis

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Review question / Objective: To establish the effectiveness of physiotherapy techniques for pain treatment and functionality in patients with Complex Regional Pain Syndrome.

Condition being studied: Complex Regional Pain Syndrome is a chronic condition characterized by causing spontaneous or induced pain described by the patient disproportionately in relation to the inciting event, which leads to lower functionality and disability.

Eligibility criteria: The syndrome's diagnosis should have been made following the Budapest criteria or any other duly validated criteria. All the studies that mentioned the CRPS but their study subject was not its treatment were excluded. In addition, we did not include studies performed with animals, systematic reviews, summaries, thesis, pilot studies, or letters to the editor.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 25 July 2022 and was last updated on 25 July 2022 (registration number INPLASY202270109).

induced pain described by the patient disproportionately in relation to the inciting event, which leads to lower functionality and disability. Furthermore, this pain is resistant to several treatments. The clinical presentation of CRPS is related to adaptive neurological disorders in the central and peripheral nervous system, autonomic peripheral vasomotor dysfunction (specifically in the sympathetic nervous system), and post-traumatic inflammatory

changes. Several interventions have been described for this syndrome, such as physical therapy and physiotherapy. Even though there are many techniques available, there is a lack of agreement about their efficiency or which one is more effective.

Condition being studied: Complex Regional Pain Syndrome is a chronic condition characterized by causing spontaneous or induced pain described by the patient disproportionately in relation to the inciting event, which leads to lower functionality and disability.

METHODS

Search strategy: We searched for English-written published articles using the boolean operators “AND” and “OR” with the following keywords: “Complex Regional Pain Syndrome”, “physical therapy”, “physiotherapy”, “rehabilitation”, “manual therapy”, “graded motor imagery” and “electrotherapies” in PubMed/Medline, Web of Science, Scielo, PEDro, and CINAHL.

Participant or population: Patients with a diagnosis of Complex Regional Pain Syndrome type I and/or type II. No age limit was considered.

Intervention: Any kind of physical therapy technique by itself or combined with others, such as physical agent-based interventions, therapeutical exercise, and manual therapy, among others.

Comparator: Any physical sham treatment technique, or only medical treatment or no intervention.

Study designs to be included: Randomized clinical trials that include a control group.

Eligibility criteria: The syndrome’s diagnosis should have been made following the Budapest criteria or any other duly validated criteria. All the studies that mentioned the CRPS but their study subject was not its treatment were excluded. In addition, we did not include

studies performed with animals, systematic reviews, summaries, thesis, pilot studies, or letters to the editor.

Information sources: The following electronic databases were consulted: PubMed/Medline, Web of Science, Scielo, PEDro, and CINAHL.

Main outcome(s): Pain: assessed by a visual analog scale, numerical analog scale, LANSS, Pain Detect, DN4, or any other developed and properly validated for this purpose. Functionality/Disability: assessed by DASH, Quick DASH, DHI, WAQ, or any other developed and properly validated for this purpose.

Quality assessment / Risk of bias analysis: The methodological quality of the studies was assessed according to the PEDro scale criteria.

Strategy of data synthesis: All the articles that matched the search strategy were reviewed independently by two of the authors. Both reviewers selected the studies according to the analysis of the title and summary of each article. Those articles that met the criteria were taken to the second phase of the review, consisting of the complete analysis of each one and the extraction of the referred information as follows: a) applied physical rehabilitation techniques, b) study’s subject, c) characteristics of each sample group, d) evaluated variables, e) results, and f) recommendations from each investigation. The information was recorded in a Microsoft Excel® spreadsheet for further analysis. The extracted information was analyzed using descriptive statistics methods, and the difference between the standardized mean of the different results, through a meta-analysis.

Subgroup analysis: For meta-analysis purposes, three sub-groups were organized according to the fundamentals of each applied physical rehabilitation technique: one for “physical agents”, another for “behavioral modification”, and the last one for “sensory-motor rehabilitation”. Matching clinical trials were

added to each sub-group. The variables of functionality and pain were analyzed in order to extract the mean and standard deviation from each one, before and after treatment, for both the control group and experimental group. From here, we obtained the standardized mean difference for each variable (Hedges' g). The data was displayed in forest plot diagrams.

Sensitivity analysis: When heterogeneity was high, the meta-analysis excluded the studies with higher data dispersion.

Language restriction: Only studies published in English or Spanish.

Country(ies) involved: Chile.

Keywords: Complex Regional Pain Syndrome; physical rehabilitation methods; pain; disability; Randomized clinical trials.

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