INPLASY PROTOCOL

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Department of medical rehabilitation sciences.

Modified constrained-induced movement therapy on upper extremity functions in post stroke survivors at various recovery stages and rehabilitation settings

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Review question / Objective: Is modified constrained-induced movement therapy delivered at different rehabilitation settings can improve upper extremity functions in acute, sub-acute and chronic stages of stroke when compared with conventional physiotherapy or placebo/no treatment)?

Condition being studied: Stroke is one of the leading cause of death and disability around the globe. Majority of stroke survivors were constrained to participate in the social structure due to extremity impairments and functional limitations. The quality of life of post stroke subjects were directly proportional to the extremity functions.

Information sources: Cochrane digital library, PubMed, Medline, Embase, and Pedro databases.

INTRODUCTION

Review question / Objective: Is modified constrained-induced movement therapy delivered at different rehabilitation settings can improve upper extremity functions in acute, sub-acute and chronic stages of stroke when compared with conventional physiotherapy or placebo/no treatment)?

Rationale: The constrained-induced movement therapy is a multifaceted intervention. Researchers has modified its different dimensions such as duration of session, number of activities to be trained, duration of restricting unaffected upper extremity and the total duration of therapy to improve the adherence and compliance

of patients to the treatment. The mCIMT has established to be an effective treatment for improving upper extremity functions at sub-acute stage of stroke but, its effect on acute and chronic stages were yet to be studied. Previously mCIMT was extensively practiced at institutions under close monitoring of therapists. Recently a home based model of mCIMT were reported by the researchers. This home based model will minimize the support of therapist by maximizing the support of caregiver. It reduces the financial burden and staff to patient ratio if it proves to be as effective as institutional based therapy. The present review aimed to study the effect of modification of various dimensions of CIMT on acute, sub-acute and chronic subjects at different rehabilitation settings.

Condition being studied: Stroke is one of the leading cause of death and disability around the globe. Majority of stroke survivors were constrained to participate in the social structure due to extremity impairments and functional limitations. The quality of life of post stroke subjects were directly proportional to the extremity functions.

METHODS

Search strategy: The appropriate studies will be searched in Cochrane digital library, PubMed, Medline, Embase and Pedro databases using keywords stroke, functions, upper extremity functions, dexterity, grip strength, Constrained-induced movement therapy (CIMT) modified Constrained-induced movement therapy (mCIMT). We intend to include studies published in English.

Participant or population: Both ischemic and hemorrhagic post stroke subjects of acute, sub-acute and chronic recovery stages with age above 18 years.

Intervention: Modified Constrained-induced movement therapy (mCIMT).

Comparator: Control group (conventional physiotherapy or placebo/no treatment).

Study designs to be included: Randomized Controlled Trials.

Eligibility criteria: A randomized control trails (RCT's) on mCIMT in improving upper extremity functions in stroke population will be included. We will exclude studies on interventions which compares with physiotherapy approaches or techniques or utilize any kind of assistive devices and quasi experimental studies.

Information sources: Cochrane digital library, PubMed, Medline, Embase, and Pedro databases.

Main outcome(s): Upper extremity functions.

Additional outcome(s): After reviewing the randomized control trials the additional outcome measures will be summarized.

Data management: The data we are planning to collect from the included RCT's are personal characteristics, recovery stage, methodology, interventions, outcome measures, rehabilitation setting, compliance and adherence rate, results and risk of bias.

Quality assessment / Risk of bias analysis: The quality of the appropriate studies will be assessed by using Pedro scale and TIDieR (Template for intervention description and replication) to report intervention. Risk of bias will be assessed by two independent reviewers any differences between them will be sorted by the third reviewer.

Strategy of data synthesis: Meta-analysis will be performed if the heterogeneity among the included studies is less than 70% (I2 <70%) if not, a simple systematic review will be performed to describe the results. A random effect model will be performed if we found great amount of heterogeneity among included studies otherwise we will perform a fixed-effect model.

Subgroup analysis: Subgroup analysis will be done based on type of stroke, recovery

stage of the stroke, duration of the treatment and type of rehabilitation setting.

Sensibility analysis: Sensitivity will be assessed considering the following aspects: (a) random allocation, (b) concealed allocation, (c) methodological quality, (d) blinding of participants, (e) therapists blinding, (f) outcomes assessor blinding, (g) intention to treat analysis, and (h) dropouts.

Language: English.

Country(ies) involved: Kingdom of Saudi Arabia.

Other relevant information: An standardized mean difference will be used if the outcome measures were measured using different scales if not the treatment effects will be detailed through the mean difference in case of same scale used for outcome measures at 95% confidence intervals (95% CI) for continuous data. If outcomes are dichotomous it will be reported through risk differences at 95% CI.

Keywords: Stroke, Modified constrained-induced movement therapy, upper extremity functions, and rehabilitation settings.

Contributions of each author:
Author 1 - Fiasal Asiri - Framing objectives and methodology, reviewing the articles, Performing quality assessment and statistical analysis of the included studies, drafting and approving the final manuscript.
Author 2 - Jaya Shanker Tedla - Searching relevant articles, data extracting, analyzing the results and writing discussion.
Author 3 - Kumar Gular - Searching relevant articles, reviewing the articles, performing risk of bias assessment and sensitivity.