

INPLASY PROTOCOL

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The Influences of Tai Chi on Balance Function and Exercise Capacity among Stroke Patients: A Meta-analysis

Zheng, X¹; Wu, X²; Liu, Z³; Wang, J⁴; Wang, K⁵; Yin, J⁶; Wang, X⁷.

Review question / Objective: 1. What are the main problems of current stroke patients? What are the main interventions for stroke patients? 2. What is the effect of physical exercise on balance and motor ability in stroke patients? 3. What is the effect of physical exercise on balance and motor ability in stroke patients?

Condition being studied: According to statistics, there are about two million new stroke patients every year in China, nowadays there are a total of 6-7 million survival Chinese patients, whose mortality rate reaches 10% - 30% and the disability rate around 60% - 70%. In addition, around 80% of stroke patients suffer from impairment of lower limb motor function, which severely troubles their daily activities and lowers their quality of life.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 21 January 2021 and was last updated on 21 January 2021 (registration number INPLASY202110086).

INTRODUCTION

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METHODS

Participant or population: In this study, we selected the stroke patients.

Intervention: In the study, we select the articles with the intervention by Tai Ji, Tai Chi, TaiJiQuan and so on.

Comparator: None.

Study designs to be included: RCT.

Eligibility criteria: Criteria of the Included Literature: ①The subjects of the study were all stroke patients with stable conditions and were in line with the stroke diagnostic criteria formulated by the 4th Cerebrovascular Disease Academic Conference of the Chinese Medical Association[9] or the stroke diagnostic criteria regulated by the American Heart Association/American Stroke Association (AHA/ASA)[10]; ②The vital signs were stable and there was no movement disorder; ③If a study had two treatment groups, it was regarded as two studies; ④The type of this study is randomized controlled trial (RCT); Criteria of The Excluded Literature: ①The subjects included in the experiment were normal elderly without stroke diseases; ②The subjects had dyskinesias and could not complete Tai Chi exercises; ③There was no pure Tai Chi exercise intervention group; ④Papers with multiple releases and low quality assessment; ⑤Papers with unclear and incalculable experimental data.

Information sources: Computer search conducted on PubMed, Embase, WOS, the Cochrane Library, CNKI, Wan Fang, VIP and

CBM database to collect randomized controlled trials on Tai ji intervention in stroke patients' balance function and motor ability.

Main outcome(s): Outcome indicators selected various scales and testing indicators for evaluating balance function and exercise ability, including Berg Balance Scale (BBS), standing and walking, gravity center swing, short physical performance battery (SPPB), Fugl-Meyer Assessment Scale (FMA), six-minute walking test (6MWT).

Quality assessment / Risk of bias analysis: The risk of bias criteria of randomized controlled trials (RCT) in Cochrane Collaborative Network were adopted to perform qualitative evaluation of seven aspects of RCT: random sequence generation, distribution concealment, blind method of subjects and researchers, blind method of outcome evaluator, incomplete outcome data, selective report and other bias, and each index was judged by 'low bias risk', "uncertain bias risk" or "high bias risk".

Strategy of data synthesis: Used Review Manager 5.3 for the literature data process, this paper had the combined effect size, heterogeneity test, and drew a forest diagram. The literature outcome indicators were all continuous variables, the effect size chose Mean Difference (MD) and Standardized Mean Difference (SMD), and effect size was MD=95% of confidence interval. This Meta-analysis strictly follows the PRISMA guidelines[8], used P value and I² for heterogeneity test. If there was no statistical heterogeneity between the results of each study (I²≤50% , P>0.10), the fixed effects model would be selected. If there was statistical heterogeneity between the studies, the source of the heterogeneity would be further analyzed, and the random effects model was used for analyses after excluding the influence of obvious clinical heterogeneity.

Subgroup analysis: Planned subgroup analyses will be: (A) Type of frequency of

Tai Ji; (B) Type of duration of Tai Ji; (C) Type of period of Tai Ji.

Sensibility analysis: The Review Manager 5.3 was used for sensitivity analysis of result with high heterogeneity.

Country(ies) involved: China.

Keywords: Stroke; Tai Chi; balance function; exercise ability; meta-analysis.

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