

INPLASY PROTOCOL

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Conflicts of interest:
None declared.

INTRODUCTION

Review question / Objective: The aim of this study was to investigate the efficacy of

Efficacy of kinesio taping in the treatment of children with cerebral palsy: a meta-analysis

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Review question / Objective: The aim of this study was to investigate the efficacy of kinesio taping in the treatment of children with Cerebral Palsy. **P:**The subjects were children with cerebral palsy. **C:**The patients in the treatment group were treated with intramuscular adhesive therapy, and the other intervention measures were the same as those in the control group. The Control Group was treated with routine rehabilitation therapy (such as physical therapy, occupational therapy, etc.). **O:**Outcome measures: 1 Gross Motor Function: The Gross Motor function rating scale was used to assess D (standing and standing) and E (walking and running and jumping) . 2 Muscle Tone: Modified Ashworth Scale (MAS) was used to measure muscle tone. 3 Berg Balance Scale (BBS) was used to measure balance. 4 Fine Motion: The hand function was evaluated by Carroll upper extremities functional test (UEFT) . 5 Heel experiment, foot dorsiflexion angle, thigh angle. **s:**randomized controlled trial.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 01 July 2022 and was last updated on 01 July 2022 (registration number INPLASY202270004).

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intramuscular adhesive therapy, and the other intervention measures were the same as those in the control group. The Control Group was treated with routine rehabilitation therapy (such as physical therapy, occupational therapy, etc.). Outcome measures: 1 Gross Motor Function: The Gross Motor function rating scale was used to assess D (standing and standing) and E (walking and running and jumping) . 2 Muscle Tone: Modified Ashworth Scale (MAS) was used to measure muscle tone. 3 Berg Balance Scale (BBS) was used to measure balance. 4 Fine Motion: The hand function was evaluated by Carroll upper extremities functional test (UEFT) . 5 Heel experiment, foot dorsiflexion angle, thigh angle. s:randomized controlled trial.

Condition being studied: Cerebral Palsy (CP) is a group of persistent central motor and postural dysplastic and activity-restricted syndrome, which is caused by non-progressive brain damage in developing fetuses or infants. Motor disorders in cerebral palsy are often accompanied by sensory, sensory, cognitive, communication and behavioral disorders, as well as epilepsy and Secondary Musculoskeletal disorders . These functional disorders seriously affect the daily life of children with cerebral palsy, learning and bring a huge burden on the family. At present, physical therapy such as Bobath and Vojta, Chinese traditional therapy such as acupuncture and moxibustion, orthosis and botox injection are often used in the rehabilitation of cerebral palsy children. Kinesio taping (KT) was first invented in 1979 by Dr. Kenzo Kase. Kt is an elastic, drug-free taping with some breathability and waterproof properties. kinesio taping is composed of waterproof elastic cotton cloth, medical acrylic glue, release material and elasticity of up to 140% with human skin elasticity . The first kinesio taping was used in the field of sports injury, and now it has been widely used in the field of rehabilitation medicine and achieved a certain degree of efficacy . There have been a lot of literatures about the therapeutic effect of kinesio taping on cerebral palsy children,

but no quantitative description has been made. In this study, we searched the domestic and foreign randomized controlled trials of kinesio taping for the treatment of children with cerebral palsy, and conducted a Meta-analysis to provide evidence-based medicine for it.

METHODS

Search strategy: Randomized controlled trials of KT in the treatment of children with CP were searched in PubMed, Embase, The Cochrane Library, Web of Science, CBM, CNKI, Wanfang Data and VIP PubMed's search strategy:

#1 athletic tape [Mesh]

#2 tape, athletic OR orthotic tape OR tape, orthotic OR kinesio tape OR kinesio tapes OR tape, kinesio OR tapes, kinesio OR kinesiotape

#3 #1 OR #2

#4 Cerebral Palsy [Mesh]

#5 CP (Cerebral Palsy) OR Cerebral Palsy, Dystonic-Rigid OR Cerebral Palsies, Dystonic-Rigid OR Cerebral Palsy, Dystonic Rigid OR Dystonic-Rigid Cerebral Palsies OR Dystonic-Rigid Cerebral Palsy OR Cerebral Palsy, Mixed OR Mixed Cerebral Palsies OR Mixed Cerebral Palsy OR Cerebral Palsy, Monoplegic, Infantile OR Monoplegic Infantile Cerebral Palsy OR Infantile Cerebral Palsy, Monoplegic OR Cerebral Palsy, Quadriplegic, Infantile OR Quadriplegic Infantile Cerebral Palsy OR Infantile Cerebral Palsy, Quadriplegic OR Cerebral Palsy, Rolandic Type OR Rolandic Type Cerebral Palsy OR Cerebral Palsy, Congenital OR Congenital Cerebral Palsy OR Little Disease OR Little's Disease OR Spastic Diplegia OR Diplegias, Spastic OR Spastic Diplegias OR Diplegia, Spastic OR Monoplegic Cerebral Palsy OR Cerebral Palsies, Monoplegic OR Cerebral Palsy, Monoplegic OR Monoplegic Cerebral Palsies OR Cerebral Palsy, Athetoid OR Athetoid Cerebral Palsy OR Cerebral Palsies, Athetoid OR Cerebral Palsy, Dyskinetic OR Cerebral Palsies, Dyskinetic OR Dyskinetic Cerebral Palsy OR Cerebral Palsy, Atonic OR Atonic Cerebral Palsy OR Cerebral Palsy, Hypotonic OR Hypotonic Cerebral Palsies OR Hypotonic Cerebral

Palsy OR Cerebral Palsy, Diplegic, Infantile OR Diplegic Infantile Cerebral Palsy OR Infantile Cerebral Palsy, Diplegic OR Cerebral Palsy, Spastic OR Spastic Cerebral Palsies OR Spastic Cerebral Palsy #6 #4 OR #5

#7 #3 AND #6

中文的搜索策略:

#1 “肌内效贴” 或 “运动机能贴布”或“功能型贴扎布” 或“肌内效贴布”或“肌内效贴扎”或 “运动机能效贴”或“运动机能贴扎” 或“运动贴布”

#2 “脑瘫”或“脑性瘫痪”

#3 #1和#2.

Participant or population: The subjects were children with cerebral palsy.

Intervention: kinesio taping combined with routine rehabilitation treatment.

Comparator: routine rehabilitation treatment.

Study designs to be included: Randomized controlled trial.

Eligibility criteria: The inclusion criteria were Randomized controlled trial for children with cerebral palsy treated with kinesio taping. Exclusion Criteria: 1 excluded non-randomized controlled studies; 2 excluded Republished Literature; 3 excluded Literature Review, Expert Experience, case; 4 excluded non-chinese and English Literature; 5 excluded the literature that was not the main study on the effect of kinesio taping on children with cerebral palsy; 6 excluded the literature that the original data were missing and the request was fruitless; 2 excluded the literature that could not get the full text.

Information sources: Randomized controlled trials of KT in the treatment of children with CP were searched in PubMed, EMBASE, The Cochrane Library, Web of Science, CBM, CNKI, Wanfang Data and VIP.

Main outcome(s): Outcome measures: 1 Gross Motor Function: The Gross Motor function rating scale was used to assess D (standing and standing) and E (walking and

running and jumping) . 2 Muscle Tone: Modified Ashworth Scale (MAS) was used to measure muscle tone. 3 Berg Balance Scale (BBS) was used to measure balance. 4 Fine Motion: The hand function was evaluated by Carroll upper extremities functional test (UEFT) . 5 Heel experiment, foot dorsiflexion angle, thigh angle.

Quality assessment / Risk of bias analysis:

Literature Screening: duplicate literature was removed from the obtained literature using NoteExpress 3.6; Literature Meeting the inclusion criteria was selected by 2 independent researchers by reading the title and abstract; and 2 researchers by reading the full text, according to the inclusion criteria and exclusion criteria, further selection of Literature in line with the study. Data extraction after reading the full text, two researchers extracted the following information: First Author, Year of publication, intervention, outcome measures, intervention time, sample size, and so on, and drew the corresponding tables. After the information was extracted, the two researchers cross-checked the information, and if the final opinion was different, the study group was asked to discuss whether to include the information. Literature quality review two investigators conducted a risk-of-bias assessment of the included Randomized controlled trial in accordance with the Randomized controlled trial risk-of-bias assessment tool in the Cochrane system-recommended review manual 6.3,2022, and cross-checked the results. The evaluation included the following six aspects: (1) random allocation method; (2) allocation concealment scheme; (3) blind method for the study subjects, the implementers of the treatment scheme and the surveyors of the study results; (4) completeness of the outcome data; 5 selective reporting of results, 6 other sources of bias. The risk of bias is likely to be low and the evaluation of literature quality is a if the included literature meets all the above criteria, while the risk of bias is likely to be moderate and the evaluation of literature quality is b if the included literature does not meet all the above criteria If the literature did not meet all the above criteria, the risk of bias was

likely to be high, and the quality of the literature was evaluated as C.

Strategy of data synthesis: The Cochrane Collaboration RevMan 5.4 was used for Meta-analysis. MD (mean difference) was used as effect analysis statistic, and each effect provided its 95% CI. Heterogeneity among the included studies was analyzed using the χ^2 test (test level $\alpha = 0.1$), and the magnitude of Heterogeneity was quantitatively judged in combination with the I^2 test. If $P > 0.10$, $I^2 < 50\%$, considered the homogeneity among the included studies and used the fixed-effects model for Meta-analysis; if $p \leq 0.10$, $I^2 \geq 50\%$, considered the heterogeneity among the included studies and used the random-effects model; When the source of Heterogeneity could not be determined, Meta-analysis was not conducted and descriptive analysis was used. The level of meta-analysis was set at $\alpha = 0.05$.

Subgroup analysis: If a sensitivity analysis did not eliminate Heterogeneity, a subgroup analysis was performed according to the duration of the intervention.

Sensitivity analysis: Sensitivity analyses were performed using RevMan 5.4 to reflect the sensitivity of articles by deleting changes in post-effect sizes.

Country(ies) involved: China.

Keywords: cerebral palsy;CP;kinesio taping; KT; Meta-analysis.

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