

INPLASY PROTOCOL

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None declared.

Seven non-pharmacological interventions for the neurogenic bladder after Spinal Cord Injury: A protocol for systematic review and network meta-analysis

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Review question / Objective: Neurogenic bladder is a common complication of spinal cord injury, Often present with urinary bladder or urethral voiding dysfunction, Often accompanied by a urinary incontinence phenomenon, Untimely treatment can induce urinary tract infection, stones, Severe cases that can lead to renal disease, Causes the renal dysfunction, Affect the quality of life and even threaten the life safety of patients, With the advancement of modern medicine, Nonpharmacological therapies are widely used in the treatment of the neurogenic bladder after SCI, This study aims to evaluate 8 non-pharmacological therapies: acupuncture, electroacupuncture, moxibustion, bladder function training, electrical stimulation, biofeedback therapy, Repeated transcranial magnetic stimulation, rehabilitation training, Efficacy and safety of treating the neurogenic bladder following SCI.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 09 April 2023 and was last updated on 09 April 2023 (registration number INPLASY202340027).

INTRODUCTION

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infection, stones, Severe cases that can lead to renal disease, Causes the renal dysfunction, Affect the quality of life and even threaten the life safety of patients, With the advancement of modern medicine, Nonpharmacological therapies are widely used in the treatment of the neurogenic bladder after SCI, This study aims to evaluate 8 non-pharmacological therapies:

acupuncture, electroacupuncture, moxibustion, bladder function training, electrical stimulation, biofeedback therapy, Repeated transcranial magnetic stimulation, rehabilitation training, Efficacy and safety of treating the neurogenic bladder following SCI.

Condition being studied: Acupuncture, electroacupuncture and moxibustion combined with bladder function training, pelvic floor muscle electrical stimulation, biofeedback treatment, electrical stimulation, repeated transcranial magnetic stimulation, rehabilitation training and functional training to treat neurogenic bladder after spinal cord injury.

METHODS

Participant or population: (1) Selected randomized controlled trials in Chinese and English; (2) no age, gender, race and nationality; (3) required diagnosis of neurogenic bladder after spinal cord injury; (4) the control group adopts conventional methods such as conventional rehabilitation and nursing, based on the control group, using acupuncture, electroacupuncture, moxibustion, combined repetitive transcranial magnetic stimulation, biofeedback therapy, rehabilitation training, electrical stimulation, and acupuncture including awn needle, warm needle, electric temperature acupuncture, moxibustion including heat-sensitive moxibustion, electronic moxibustion.

Intervention: Acupuncture, electric acupuncture, moxibustion, combined with repetitive transcranial magnetic stimulation, biological feedback therapy, rehabilitation training, electrical stimulation, acupuncture includes awn needle, warm needle, electric temperature needle, moxibustion includes heat-sensitive moxibustion, electronic moxibustion.

Comparator: Routine rehabilitation, nursing and other routine methods.

Study designs to be included: All randomized controlled trials of non-pharmacological treatment of neurogenic bladder after SCI will be adopted. Non-randomized controlled trials, animal experiments, literature review, repeatedly published literature and outcome measures did not include response rate, urine output, urine output, residual urine volume, bladder capacity, and quality of life score. Language restrictions are in both Chinese and English.

Eligibility criteria: (1) Selected randomized controlled trials in Chinese and English; (2) no age, gender, race and nationality; (3) required diagnosis of neurogenic bladder after spinal cord injury; (4) the control group adopts conventional methods such as conventional rehabilitation and nursing, based on the control group, using acupuncture, electroacupuncture, moxibustion, combined repetitive transcranial magnetic stimulation, biofeedback therapy, rehabilitation training, electrical stimulation, and acupuncture including awn needle, warm needle, electric temperature acupuncture, moxibustion including heat-sensitive moxibustion, electronic moxibustion and moxibustion.

Information sources: CNKI, Wan fang Database, VIP database, Cochrane library, PubMed, Embase, Web of science.

Main outcome(s): Effective rate, urine output, residual urine output, bladder capacity, and quality of life score.

Quality assessment / Risk of bias analysis: The quality evaluation of the included studies was conducted using Cochrane 5.3 risk of bias assessment tool, including the generation of random allocation method, concealment of allocation scheme, blindness of patients and trial personnel, blinding of outcome assessors, completeness of outcome data, selective reporting of outcome, and other potential bias, and three categories according to the assessment criteria of risk of bias assessment tool: uncertain risk of bias, low risk of bias, and high risk of bias.

Strategy of data synthesis: Mean \pm standard deviation was used for continuity variables and odds ratio for dichotomous variables, both of which have been represented with 95% credible intervals. Risk of bias was assessed using RevMan5.4 software and frequentist reticular meta-analysis was performed at stata17.0. Using the programs network and mvmeta for data processing, drawing the network evidence map and the area ranking under the cumulative ranking curve. The larger the area value under the cumulative ranking curve is, the better the effect of this intervention is.

Subgroup analysis: If the network evidence map shows the formation of a closed loop between different studies, the ifplot command is used to detect the inconsistency, and the inconsistency factor value and 95% credible interval of each closed loop are calculated to evaluate the degree of consistency between the direct and indirect comparisons.

Sensitivity analysis: Given that different levels of methodological quality of the trial may affect the findings, sensitivity analyses will be performed to assess the robustness of the results by excluding high-risk studies.

Country(ies) involved: China.

Keywords: Spinal cord injury; Urinary Bladder, Neurogenic; Acupuncture; Electric acupuncture; Moxibustion; Biostimulation; Magnetic stimulation; Electric Stimulation; Transcranial Magnetic Stimulation; Functional training.

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