INPLASY

INPLASY2023110093

doi: 10.37766/inplasy2023.11.0093

Received: 23 November 2023

Published: 24 November 2023

Corresponding author:
ZhiWei Dong

dongzhiweigzutcm@126.com

Author Affiliation:
Guangdong provincial Hospital of Integrated Medicine affiliated to Guangzhou University of Chinese Medicine.

Use of Evidence-Based Research Approach in RCTs of Acupuncture-Related Therapies for PCa patients with urinary incontinence after radical prostatectomy: A Protocol of Systematic Review and Meta-Research

Dong, ZW[1]; Fu, SM[2]; Xie, T[3]; Zhang, BH[4]; Wang, JL[5]; Tian, N[6].

ADMINISTRATIVE INFORMATION

Support - Guangdong Provicial Science and Technology Innovation Strategy Project (NO.2022C0120) ;Key Project of Innovation Training for College Students of Jiangxi Provincial Department of Education (202210412039X).

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2023110093

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 24 November 2023 and was last updated on 24 November 2023.

INTRODUCTION

Review question / Objective With the aging of the population and the change of diet structure, the incidence and mortality of prostate cancer (PCa) in China are increasing. According to China's National Cancer Center, there will be more than 110,000 new cases of PCa in 2022, with a death rate of 4.4 per 100,000. Radical surgery is the first choice for localized PCa and has been widely used in clinical practice. However, it is often accompanied by a series of postoperative complications, especially lower urinary tract symptoms, with an incidence of up to 31%, which seriously affects patients' quality of life and physical and mental health.

Lower urinary tract symptoms are the sum of common symptoms in middle-aged and elderly men, including urinary storage symptoms and voiding symptoms. The symptoms of urinary storage area mainly include: frequent urination, urgent urination and incontinence. The main symptoms of the urination area include: dysuria, interruption of the urination line, difficulty in urinating, and insufficient drainage after urination. According to a large sample study abroad, 1476 patients with middle and advanced prostate cancer were investigated, including locally advanced and advanced metastatic PCa. In these thousands of cases, almost every patient had lower urinary tract symptoms, of which more than 80% patients had moderate to severe lower urinary tract symptoms.

Urinary incontinence is a common complication after prostatectomy because surgical operation causes different degrees of damage to local muscles
or nerve vessel bundles of patients.Acupuncture is a therapeutic strategy of Integrative and Complementary Practice and a typical form of treatment in Traditional Chinese Medicine.

Previous studies have verified the efficacy of Acupuncture-Related Therapies in post-PCA application. There are reports that Acupuncture-

Related Therapies can effectively relieve symptoms such as frequent urination, urinary incontinence or urinary retention after PCa operation, but there is still a lack of high-quality evidence-based evidence.Therefore, the present protocol is developed to conduct a systematic review and network meta-analysis to evaluate the evidences related to the effectiveness and safety of acupuncture on PCa patients with urinary incontinence after radical prostatectomy, and to provide a basis for the development of reliable clinical strategies.

Rationale The latest cancer statistics have shown that in the past decade, the proportion of prostate cancer for long-term diagnosis has increased from 3.9% to 8.2%. At present, this disease is an important public health problem faced by male. Urinary incontinence is a common complication after prostatectomy because surgical operation causes different degrees of damage to local muscles or nerve vessel bundles of patients. The occurrence of urinary incontinence greatly affectsthedaily life of patients and seriously reduces their quality of life.Clinical studies used acupuncture to treat UI and identified a beneficial clinical effect in improving continence after at least three weeks with peak improvement at six weeks.
However, there has been little systematic review showing the evidences of the effectiveness and safety of acupuncture on PCa patients with urinary incontinence after radical prostatectomy over the years, let alone the quantitative comparative network meta-analysis efficacy and safety. Thus, it is substantially imperious to take an overall consideration of both the efficacy and the safety of acupuncture therapies and renew outdated clinical evidence supporting acupuncture-related therapies in the treatment of patients with UI after PCaradical prostatectomy.

Condition being studied Prostate cancer is a common malignant tumor of male genitourinary system. With the aggravation of aging in China, the incidence of prostate cancer has been increasing year by year, and the age factor is one of the important factors of the disease, which is positively correlated. At present, radical prostatectomy has become the most effective way to treat early prostate cancer, which has been widely used in clinical practice. However, urinary incontinence, as the most important complication after radical prostatectomy, has an incidence of up to 15% to 20%. At the same time, urinary incontinence is also the most painful symptom for patients. The main cause of this complication is the inevitable damage to the muscles and nerves surrounding the prostate during surgery. At present, the treatment of urinary incontinence after radical prostatectomy is difficult, and no drugs with exact efficacy have been developed clinically. Behavioral therapy and physical therapy with pelvic floor muscle exercise are the main means to treat this disease.
Acupuncture treatment of urinary incontinence is safe, convenient and has no adverse reactions complications. A large multi-center clinical study has confirmed that the clinical efficacy of acupuncture in the treatment of stress urinary incontinence, but the length of electroacupuncture. Further studies on curative effect and mechanism are needed. Currently on the traditional needle.
There are few reports of moxibustion therapy in the treatment of urinary incontinence after operation.Most of them are abdominal and lumbosacral, poor reproducibility of clinical efficacy. In addition, the traditional acupuncture method did not stimulate the needle sensation to the periurethra.It is difficult to achieve direct excitation of the pudendal nerve to induce the pelvic floor muscle,the sphincter of stem root is rhythmically contracted to assist pelvic floor muscle forging.
Thus, we preliminary search found that a large number of RCTs research results have been published in last decade and propose the current protocol to perform the systematic review by assessing the evidences related to the effectiveness of acupuncture-related therapies for the patients with UI after PCaradical prostatectomy.

METHODS

Search strategy MedLine, EMBASE, Cochrane Library, China National Knowledge Infrastructure, Wanfang Database, Chinese Biomedical Database, and China Science and Technology Journal Database will be searched from January 2003 to December 2023 for RCTs of acupuncture-related therapies on PCa with UI after PCaradical prostatectomy. The full text and references of each RCT were read to assess whether systematic reviews or other types of studies with similar research questions and end-users' perspectives were cited to justify and design the trial. In addition, the discussion section were analyzed to evaluate whether trials placed the new result in the existing SRs to draw a conclusion.Multivariable logistic regression was used to find variables that associated with 3 aspects of EBR approach: (1) citing clinical studies for justification, (2) citing relevant studies that obtain the perspectives of end users, and (3) citing clinical studies for results discussion.

The supplementary search was conducted from Library of Guangzhou University of Chinese Medicine and Clinical Trials and Chinese Clinical Trial Registry. Besides, the relevant information was collected by reviewing the references available to the included studies. The search strategy adopted the combination of subject words and free words.

Take Web of Science as an example:

#1 TS=(urinary incontinence OR Urinary Incontinence, prostate cancer OR Urinary Incontinence, prostatectomy OR Urinary Reflex Incontinence OR Incontinence, Urinary Reflex OR Urinary Urge Incontinence OR Urge Incontinence OR Incontinence, Urge OR radical prostatectomy, urinary incontinence OR urge urinary incontinence OR UI OR RP OR PCa OR incontinence OR Lower urinary tract symptoms OR incontinence of urine)

#2 TS=(acupuncture OR moxabustion OR acupoint therapy OR electroacupuncture OR warm needling)

#3 TS=(randomized controlled trial OR randomized OR placebo)

#4 #1 AND #2 AND #3.

Participant or population Patients meet the diagnostic criteria for urinary incontinence with weakened renal after prostatectomy, and patients have urge urinary incontinence.There are no restrictions on age,sex, course of disease, degree of illness, aswell as source of cases for patients.

Intervention For acupuncture or acupuncture-related therapies as an intervention.

Comparator The control group will beincluded individuals who underwenttreatment with routine medicine functional exercises, pelvic floor muscle training, other physical therapy.

Study designs to be included In order to maintain rigorous objectivity and reliability,the systematic review and meta-analysis will include RCTs including quasirandomized controlled trials(quasi-RCTs). We will exclude any types of studies such as controlled (non-randomized) clinical trials (CCTs), cohort studies, casesees, and case reports.

Eligibility criteria Studies will be included so long as inclusion criteria are met. The eligibility criteria are summarized using the princi of PICOS(patients/participants, intervention, comparisons/control, outcomes, and study design type). Exclusion criteria are as follows:(1)Publication duplication; (2)difficulty in access to full text, and (3)missing data or data not available after contact with authors.

Information sources The RCTs will be retrieved from Chinese National Knowledge Infrastructure (CNKI), WanFang Data, VIP, SinoMed, Web of Science, Pubmed, EMBASE and Cochrane Library, from the inception of each database to October 13, 2022. The supplementary search was conducted from Clinical Trials and Chinese Clinical Trial Registry. Besides, the relevant information was collected by reviewing the references available to the included studies.The search strategy adopted the combination of subject words and free words.

Main outcome(s) Urine leakage volume of 1-hour pad test (weighting the pad before the patient wears it, running, lifting heavy object or climbing the stairs after drinking 500 mL of water in 5 to 10 minutes, and then weighing the pad after 1 hour of resting) and the frequency of UI in 24 hours (voiding diary for 3 days or 7 days), the score of the short form of International Consultation on Incontinence Questionnaire (ICIQ-SF, ranged from 0 to 21, the higher score suggests more serious symptoms and impacts on QoL) for UI symptoms and QoL [19], and the incidence of adverse events.

Additional outcome(s) (1)Quality of life: evaluatedby general or specific scales (2)The occurrence of adverse events can bereported narratively by qualitative analysis.

Data management The results of searchwill be exported to the EndNote (ClarivateAnalytics, version 20) referencing softwareand duplicate studies will be removedusing this software. The selection processwill be performed by two authors independently.Initially, we will screen and evaluation the titles and abstracts of studies, and select those likelyto be of relevance to our systematic review.In the second stage of selection, we will assess the fulltext of the studies andconfirm the eligibility for our review. When there are any disagreements, we willresolve the disagreements by discussion.Using the PRISMA-compliant flow chart(http://wwwprismastatement.org).

Quality assessment / Risk of bias analysis Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach was used to rate the evidences as “high”, “moderate”, “low” and “very low”. As all the included studies were RTCs, the initial certainty of the evidences was high, therefore, only down grade factors were considered, i.e. risk of bias, imprecision, inconsistency, indirectness and publication bias.Using the risk of bias tool to analyze ROB of the eligible studies. Disagreement

was solved after discussed with the third investigator.

Strategy of data synthesis Statistical analysis was performed by Review Manager 5.3 software. I2 was used to measure the heterogeneity among the studies. When I2 50%). The subgroup analysis was conducted according to the type of moxibustion and the course of treatment to identify the source of heterogeneity.

Subgroup analysis To reduce the likelihood of spurious findings and avoid a false positive result,this systematic review will perform a subgroup analysis to explore and assess the heterogeneity. In cases of high heterogeneity, we will conduct subgroup according to the subtypes of analyses quality of study evidence(high risk, unclear and low risk), or to the other factors affecting the outcomes.

Sensitivity analysis The sensitivity analysis was carried out to assess the stability of the findings by gradually deleting each study. In terms of effect size, relative risk (RR) was used for binary variables, mean difference (MD) or standardized mean difference (SMD) for continuous variables, and with 95% confidence interval (CI) was calculated accordingly. For any outcome with more than 10 trials included in analysis, Stata15.1 was adopted for Egger test to analyze the publicationbias.

Language restriction Articles whose full text can be obtained will be included.Considering the language restriction of researchers,the included studies will be limited to the literature written in English or Chinese.

Country(ies) involved The People's Republic of China.

Other relevant information Two investigators will accomplish independently literature screening and data extraction, which is then cross-checked. Any disagreement will be solved by the discussion or consulting with the third investigator.(1) Literature screening: The articles were managed with EndNote software and screened in compliance with the inclusion and exclusion criteria. After reading titles and abstracts, the irrelevant articles will be excluded. The eligible articles will be determined after reading the full texts of the remaining articles.(2) Data extraction: Two investigators will extract the data independently according to the data collection form (Excel) designed in advance.If the above data are not reported in the original manuscripts, the authors will be contacted to obtain the original data.

Keywords Evidence-Based Research; Acupuncture; Prostate Cancer; Urinary Incontinence; Protocol.

Dissemination plans This systematic review and meta-analysis will not need ethical approval, because it doesn't involve human beings. We will publish this systematic review and meta-analysis electronically in a peer-reviewed journal. This systematic review andnetwork meta-analysis will give healthcare practitioners important practical guide and information for treating prostate cancer.

Contributions of each author

Author 1 - Dong ZhiWei - Author 1 developed the search methods, performed data analysis, registered this protocol and drafted the original manuscript.
Email: dongzhiweigzutcm@126.com
Author 2 - Fu ShuMei - developed the search methods, performed data analysis, registered this protocol and drafted the original manuscript.Fu ShuMei and Dong ZhiWei contributed equally to this work and should be considered as co-first authors.
Email: qwe1033381907@qq.com
Author 3 - Xie Tao - The author contributed to the development of the selection criteria, and the risk of bias assessment strategy.
Email: xietaoacu@163.com
Author 4 - Zhang BiHang - The author read, provided feedback and approved the final manuscript.
Email: 18800460163@139.com
Author 5 - Wang Jun-Lan - The author read, provieded feedback and put forward valuable suggestions.
Author 6 - Tian Ning - The author is the guarantor of funding acquisition, corresponding author in this article, and will act as an arbitrator in the event of a disagreement. All authors have read and approved the final manuscript.Describe contributions of each author.
Email: acurfrong@126.com