

INPLASY PROTOCOL

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Corresponding author:
xianfeng liu

1002589960@qq.com

Author Affiliation:
Shandong Provincial Hospital
Affiliated to Shandong First
Medical University.

Support: Health commission of
Shandong Province.

**Review Stage at time of this
submission:** Formal screening of
search results against eligibility
criteria.

Conflicts of interest:
None declared.

INTRODUCTION

Review question / Objective: P: aged \geq 60 years with no preoperative diagnosis of cognitive impairment. I: The experimental group was TETRA or TEAS combined control group, there was no limitation on acupoints and test time. C: control group was treated with blank control or sham

Meta-analysis of the effect of percutaneous acupoint electrical stimulation on cognitive function in elderly patients after surgery

Liu, XF¹; Lv, SS²; Zheng, J³; Lv, FF⁴.

Review question / Objective: P: aged \geq 60 years with no preoperative diagnosis of cognitive impairment. I: The experimental group was TETRA or TEAS combined control group, there was no limitation on acupoints and test time. C: control group was treated with blank control or sham intervention. O: MMSE score; Incidence of POCD; S-100 β ; IL-6; TNF- α ; occurrence of adverse reactions.

Information sources: CNKI、PubMed、VIP、EMbase、Springer、Elsevier.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 04 May 2023 and was last updated on 04 May 2023 (registration number INPLASY202350016).

intervention. O: MMSE score; Incidence of POCD; S-100 β ; IL-6; TNF- α ; occurrence of adverse reactions.

Condition being studied: Postoperative cognitive dysfunction (POCD) is a syndrome of long-term cognitive dysfunction, which is characterized by postoperative limitation of memory,

intelligence and executive function. The occurrence of POCD not only affects the postoperative recovery of patients, reduces the postoperative quality of life of patients, and increases the postoperative mortality, but also increases the consumption of family and social medical care, thus aggravating the social burden. Zhang et al. showed that the incidence of POCD in elderly patients was as high as 8.9~61%. transcutaneous electrical acupoint stimulation (TEAS) is a type of transcutaneous electrical nerve stimulation (TEAS). TEAS combined with acupoint therapy has similar analgesic effect and peripheral and central effects as electroacupuncture, and its operation is simple, safe and non-invasive, which is easy for patients to accept. Although relevant studies have proved that TEAS can relieve postoperative nausea, vomiting and pain and reduce the occurrence of lower limb venous thrombosis in elderly patients after surgery, there is still no systematic evaluation of the effect of percutaneous acupoint electrical stimulation on cognitive function in elderly patients after surgery. Therefore, this study conducted a meta-analysis on the improvement of cognitive function in elderly postoperative patients with percutaneous acupoint electrical stimulation, in order to provide reliable evidence-based evidence for clinical application and promotion.

METHODS

Search strategy: Using a combination of subject terms and free words, search terms include: "transcutaneous electrical acupoint stimulation" OR "TEAS" OR "neurocognitive disorders" "Cognitive Function".

Participant or population: Aged ≥ 60 years with no preoperative diagnosis of cognitive impairment.

Intervention: The experimental group was TETRA or TEAS combined control group, there was no limitation on acupoints and test time.

Comparator: The experimental group was TETRA or TEAS combined control group, there was no limitation on acupoints and test time.

Study designs to be included: RCT research.

Eligibility criteria: None.

Information sources: CNKI、PubMed、VIP、EMbase、Springer、Elsevier.

Main outcome(s): MMSE score.

Additional outcome(s): Incidence of POCD; S-100 β ; IL-6; TNF- α ; occurrence of adverse reactions.

Quality assessment / Risk of bias analysis: Two researchers with a master's degree and specifically trained in evidence-based medicine used the Cochrane Collaboration to conduct an independent quality assessment of the other RCT authenticity assessment tools, including seven assessment aspects.

Strategy of data synthesis: Statistical analysis was performed using Revman 5.3 software and Stata 12.0 software. Count data were expressed using the ratio (OR) and its 95% CI. The studies were first tested for heterogeneity, and if $I^2 < 50\%$ and $P > 0.10$, a fixed-effects model was used to calculate the combined effect size; if $I^2 \geq 50\%$ and $P < 0.10$, a random-effects model was used to calculate the combined effect size, and the sources and causes of heterogeneity were analysed, and sensitivity analysis was performed on the results. Otherwise, only descriptive analysis was performed. $P < 0.05$ was considered a statistically significant difference.

Subgroup analysis: MMSE score and POCD incidence at different time points.

Sensitivity analysis: Sensitivity analysis was performed on the literature with high heterogeneity.

Country(ies) involved: China.

Keywords: TEAS;POCD;Postoperative patient.

Contributions of each author:

Author 1 - xianfeng Liu - Research the idea of design and literature screening and data extraction.

Email: 1002589960@qq.com

Author 2 - shanshan Lv - Literature screening and data extraction.

Email: lsslss.happy@163.com

Author 3 - Jing Zheng - Research the idea of design and Review the Research.

Email: zhjingsdph@163.com

Author 4 - fangfang Lv - Literature screening and data extraction.

Email: lucky1986@163.com