

INPLASY

Acupuncture's Impact on the Permeability of the Blood - Brain Barrier: A Systematic Review and Meta - Analysis of Preclinical Evidences and Underlying Mechanisms

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ADMINISTRATIVE INFORMATION

Support - No.

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 February 2025 and was last updated on 22 February 2025.

INTRODUCTION

Review question / Objective Compared with the single control intervention, what is the impact of acupuncture on the permeability of the blood - brain barrier (BBB)?

Condition being studied In recent years, blood - brain barrier (BBB) dysfunction has been considered to be closely related to the occurrence and development of various neurological diseases, including Alzheimer's disease, stroke, etc. Modern research has shown that acupuncture has a protective effect on the nervous system through multiple mechanisms, among which the protective effect on the blood - brain barrier is particularly significant. However, whether acupuncture can truly regulate the permeability of the blood - brain barrier, the specific mechanisms of its action, and the impacts of different acupuncture parameters and intervention modes have not yet reached a clear conclusion.

METHODS

Participant or population Rats and mice.

Intervention The experimental group used acupuncture intervention.

Comparator Sham acupuncture or no acupuncture.

Study designs to be included controlled animal study.

Eligibility criteria

- 1.The research animals are not rats or mice.
- 2.Study designs included are non - randomized animal controlled experiments.
- 3.The experimental group did not use acupuncture intervention.
- 4.The control group includes acupuncture interventions.
- 5.The outcome measures are not related to the blood - brain barrier (BBB) permeability.

Information sources We searched databases including PubMed, Embase, Web of Science, and the Cochrane Library. The search dates ranged from the inception to December 20th, 2024.

Main outcome(s) EB, Occludin, Claudin - 5, ZO - 1.

Quality assessment / Risk of bias analysis By using SYRCLE's risk of bias tools.

Strategy of data synthesis This study will use RevMan 5.4 and Stata 15.1 software for statistical analysis.

Subgroup analysis There are no plans at present.

Sensitivity analysis The "one - study - removed method" is adopted to conduct a further sensitivity analysis.

Country(ies) involved China.

Keywords Animals; Acupuncture; BBB.

Contributions of each author

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