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New Insights into the Therapeutic Potential of Traditional Chinese Medicine and Western Medicine Integration for Coronary Heart Disease Complicated by Cerebral Ischemic Stroke: A Systematic Review and Meta-Analysis

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ADMINISTRATIVE INFORMATION

Support - No.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202510112

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 26 January 2025 and was last updated on 26 January 2025.

INTRODUCTION

Review question / Objective This research sought to demonstrate potential therapeutic strategies for coronary heart disease (CHD) complicated by cerebral ischemic stroke (CIS) by rigorously evaluating the efficacy and safety of integrating TCM with WM through meta-analysis.

Rationale This study, building on the existed background, seeks to perform an extensive review of national and international literature to objectively assess the clinical benefits and safety of integrating TCM with WM for patients suffering from CHD complicated by CIS, with the goal of elucidating potential clinical strategies.

Condition being studied This research sought to demonstrate potential therapeutic strategies for coronary heart disease (CHD) complicated by cerebral ischemic stroke (CIS) by rigorously

evaluating the efficacy and safety of integrating TCM with WM through meta-analysis.

METHODS

Search strategy A detailed investigation of numerous databases was undertaken to assess TCM therapeutic remedies for CHD complicated with CIS. The databases referenced were PubMed, EMBASE, Web of Science, and the Cochrane Library, in addition to CNKI, Wanfang, VIP, and CBM. The data retrieval encompassed the complete temporal range of all databases up to March 2024, without restrictions on language, participant condition, or publication year. In the current search strategy, keywords and MeSH terms were systematically combined, with a specific emphasis on "CHD complicated by CIS" and "TCM" Additionally, the search included interventions and diseases relevant to the study

subjects, such as herbal medicine, Chinese medicine, and CHD complicated with stroke, among others. To ensure thoroughness and mitigate any potential omissions, a manual review of journal literature was also performed.

Participant or population The study included participants without age, gender, or race limitations. Individuals diagnosed with CHD and CIS according to international diagnostic criteria or a clearly defined standard were involved.

Intervention The experimental group in this study received TCM as the exclusive positive intervention, as opposed to the control group. No restrictions were placed on the amount or length of the treatment provided.

Comparator WM therapy with proven effectiveness in improving CHD and CIS. In the studies reviewed, there were no variations in the specifications or dosages of WM between the control and experimental group.

Study designs to be included This investigation covered all trials documenting the use of TCM alongside WM for treating CHD complicated by CIS, regardless of language or publication status.

Eligibility criteria

Inclusion Criteria.

(1) Participant Characteristics. The study included participants without age, gender, or race limitations. Individuals diagnosed with CHD and CIS according to international diagnostic criteria or a clearly defined standard were involved.

(2) Intervention Types. The experimental group in this study received TCM as the exclusive positive intervention, as opposed to the control group. No restrictions were placed on the amount or length of the treatment provided.

(3) Types of Comparison: WM therapy with proven effectiveness in improving CHD and CIS. In the studies reviewed, there were no variations in the specifications or dosages of WM between the control and experimental group.

(4) Types of Outcomes. The primary endpoints were the overall effective rate and adverse reactions, with secondary outcomes including improvement of electrocardiography (ECG), TCM score, LVEF, MMSE score, NIHSS score, TC, TG, LDL-C, HDL-C, blood viscosity, FIB, and platelet aggregation. A minimum of one result has been reported from every article included in the review.

(5) Study Design Categories: This investigation covered all trials documenting the use of TCM alongside WM for treating CHD complicated by CIS, regardless of language or publication status.

Exclusion Criteria.

The following were outlined as the exclusion criteria: (1) Studies that were not clinical trials or involved animal subjects were excluded. (2) Studies in which the control group employed TCM modalities, such as Chinese patent medicine, acupuncture, herbal extracts, and analogous interventions, were not considered. (3) Studies identified as duplicate publications or containing redundant clinical data were excluded. (4) Studies for which original data were inaccessible or could not be extracted, despite efforts to contact the authors, were also excluded. (5) Studies where the outcome effect was ambiguous due to incomplete data, unclear reporting of outcomes, or inappropriate statistical methods were included.

Information sources The databases referenced were PubMed, EMBASE, Web of Science, and the Cochrane Library, in addition to CNKI, Wanfang, VIP, and CBM.

Main outcome(s) The primary endpoints were the overall effective rate and adverse reactions, with secondary outcomes including improvement of electrocardiography (ECG), TCM score, LVEF, MMSE score, NIHSS score, TC, TG, LDL-C, HDL-C, blood viscosity, FIB, and platelet aggregation.

Quality assessment / Risk of bias analysis A team of two independent researchers extracted data from these studies. To improve efficiency, various variables, including first authors, publication dates, countries, study designs, sample sizes, mean ages, genders, intervention measures, and follow-up durations, were systematically organized in a study-specific Excel spreadsheet. The data were then subjected to cross-validation before being imported into Review Manager. Following the Cochrane Handbook for Systematic Reviews guidelines, the potential for bias in each study included in the analysis was evaluated. If there were disagreements, a third reviewer was brought in to help reach an agreement.

Strategy of data synthesis Review Manager (version 5.4) together with Stata software (version 17.0) was employed for all analyses. The odds ratio (OR) was used for binary variables, while the mean difference (MD) or standardized mean difference (SMD) was employed for continuous variables, depending on the measurement units. The findings were presented with 95% confidence intervals. Chi-square statistics were used to evaluate heterogeneity, which was considered present if the P-value was below 0.1 and the I² statistic exceeded 50%, leading to the application

of a random-effects model. Alternatively, the use of a fixed-effects model was warranted when the P-value was at least 0.1 and the I² statistic did not exceed 50% (Higgins and Thompson, 2002).

Subgroup analysis Not reported.

Sensitivity analysis By systematically excluding individual studies, a sensitivity analysis performed to determine how low-quality studies affect the stability and robustness of the meta-analysis. To evaluate publication bias, Begg's funnel plot and Egger's test were employed.

Language restriction No.

Country(ies) involved China.

Keywords coronary heart disease, Cerebral ischemic stroke, traditional Chinese medicine, combination of Chinese and western medicine, meta-analysis, grade evaluation.

Contributions of each author

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