



Rhubarb root and rhizome-based Chinese herbal prescriptions for acute ischemic stroke: A systematic review and meta-analysis



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KEYWORDS

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Summary

Background: Traditional Chinese Medicine has been using in stroke victims for thousands of years, and the rhubarb root and rhizome (RRR)-based Chinese herbal prescription is one of the principle treatments for stroke. The objective of this study is to systematically assess the clinical efficacy and safety of RRR-based prescriptions for acute ischemic stroke.

Methods: A systematic literature search in six databases was performed to identify randomized controlled trials (RCTs), which compared RRR-based prescriptions with western conventional medicine (WCM) for acute ischemic stroke. The methodological quality of RCTs was assessed independently based on the 12 criteria recommended by the Cochrane Back Review Group.

Results: A total of 968 participants were included in 12 eligible studies. All trials were deemed to have high a risk of bias. RRR-based prescriptions have a significant effect on the improvement of the clinical efficacy rate ($n=10$), Barthel Index scores ($n=5$), National Institutes of Health Stroke Scale scores ($n=2$), Glasgow Coma Scale scores ($n=1$), and neurological deficit scores ($n=5$) when compared with WCM controls ($p<0.05$ or $p<0.01$). Six trials reported that there were no adverse events, while no mention of adverse effect monitoring was reported in the other 6 studies.

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Conclusions: Despite the apparently positive findings, it is premature to recommend the routine use of RRR-based prescriptions for acute ischemic stroke because methodological flaws undermine the strength of our findings. However, this work identifies an area, which is worthy of improvement and development for further research. Larger sample-sizes and rigorously designed RCTs are required in the future.

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Introduction

Stroke is the second leading cause of death worldwide, and the third most common cause of disability-adjusted life-years, which is the number of years lost due to ill-health, disability or early death. Its increasing global impact on the decades ahead is predicted to be the greatest in middle income countries, especially in China, which accounts for almost one-fifth of the world's total population and where stroke is already the leading cause of death and adult disability¹. Ischemic stroke is the most common type of stroke, accounting for 60–80% of all types of strokes. However, intravenously administered recombinant tissue plasminogen activator that induces thrombolysis remains the only Food

and Drug Administration approved pharmacological therapy for treatment of patients with acute ischemic stroke within 4.5 h from symptom-onset². Thus, the short therapeutic window², low usage rate³, and safety concerns⁴ have prompted a quest for additional therapeutic approaches to acute ischemic stroke.

Traditional Chinese medicine (TCM), as a form of complementary and/or alternative medicine (CAM), has been used in stroke victims for thousands of years and is still being commonly used in modern times in both China and worldwide⁵. In TCM treatment of stroke, the rhubarb root and rhizome (*Radix et Rhizoma Rhei*, RRR)-based Chinese herbal prescription, known as Tongfu method in TCM theory, was one of the main methods for stroke.

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