INPLASY PROTOCOL

To cite: Guan et al. Evaluation on the efficacy and safety of Panax notoginseng saponins in the treatment of stroke among elderly people - A systematic review and meta-analysis of 206 randomized controlled trials. Inplasy protocol 202330042. doi: 10.37766/inplasy2023.3.0042

Received: 13 March 2023

Published: 13 March 2023

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Support: **The work was supported by the Science and Technology Development Fund of Macao (FDCT: 0055/2019/AMJ).**

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

Conflicts of interest:
None declared.

Evaluation on the efficacy and safety of Panax notoginseng saponins in the treatment of stroke among elderly people - A systematic review and meta-analysis of 206 randomized controlled trials

Guan, PY[1]; Gui, DK[2]; Xu, YH[3].

Review question / Objective: **Population: The symptoms of the population were in line with the relevant diagnostic criteria for stroke both at home and abroad, and were confirmed as ischemic stroke by medical imaging tests such as MRI or CT.The subject groups were older adults with an average age of over 60, regardless of gender or race. Intervention: Intervention involves single use of PNS or combined use of PNS and WM or PNS and Treatment as usual (TAU). Comparator: All the patients in the controlled group underwent conventional routine treatment to improve their cerebral blood supply and drug treatment. Outcomes: Measurement for the outcomes should be clearly defined and includes at least one of the below items: neurological deficit score, the clinical response rate and assessment of Activities of daily living (ADLs). Study design: All the included studies were RCTs or clinical controlled trials. The study design adopted RCT.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 13 March 2023 and was last updated on 13 March 2023 (registration number INPLASY202330042).

INTRODUCTION

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Condition being studied: Stroke, a major cause of disability and death, is a common disease among elderly people. As the second cause of death among people aged over 60 around the world, it mortality is on the rise every year.With a high rate of prevalence, disability and mortality, stroke has thus become a global public health concern.Internationally, the main treatment adopted now for stroke is still vascular recanalization (thrombolysis and endovascular interventional therapy), whose effect, however, is enjoyed by only a few patients due to factors such as short time window, high cost, limited medical level, etc.Panax notoginseng saponins (PNS), with the functions of dispersing blood stasis and hemostasis, reducing swelling and relieving pain, is widely used for treating stroke in China.Although PNS has been extensively used for treating stroke and many clinical trials have confirmed its clinical efficacy and safety, whether it is effective and safe for the elderly population remains to be investigated. As a result, this study, targeting at the elderly population, comprehensively analyzed the efficacy and safety of PNS in multiple outcomes by Meta-analysis in order to provide more systematic clinical evidence for clinical medication and health decision-making concerning elderly stroke patients.

METHODS

Participant or population: The symptoms of the population were in line with the relevant diagnostic criteria for stroke both at home and abroad, and were confirmed as ischemic stroke by medical imaging tests such as MRI or CT.The subject groups were older adults with an average age of over 60, regardless of gender or race.

Intervention: Intervention involves single use of PNS or combined use of PNS and WM or PNS and Treatment as usual (TAU).

Comparator: All the patients in the controlled group underwent conventional routine treatment to improve their cerebral blood supply and drug treatment.

Study designs to be included: The study design adopted RCT.

Eligibility criteria: Exclusion criteria: 1) research with duplicate publications or duplicate data; 2) research with incomplete data or serious errors; 3) research without the full text; 4) research involving unconventional treatments in Western medicine such as Chinese herbs or acupuncture; 5) observational research, fundamental research based on cell or animal specimens, experience summaries, review papers, and case study reports.

Information sources: Based on the standard of the Cochrane Collaboration, a comprehensive literature search, without restrictions on publication time, literature type or region, was conducted to identify randomized controlled trials (RCTs) related to treating elderly stroke patients with PNS from their inception to first, May 2022, in PubMed, Embase, Cochrane library, Web of Science, CNKI, VIP, Wanfang, and China Biomedical Database. References in the included studies, related conference abstracts, published research papers and gray literature in the form of government reports, etc., are all consulted in case of leaving out any potentially useful data.

Main outcome(s): The primary outcome measure was the Post-treatment

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neurological deficit score graded by the National Institutes of Health Stroke Scale (NIHSS). Secondary outcome measures included: 1)overall clinical response rate, and 2) Post-treatment ADL score.

Quality assessment / Risk of bias analysis: The risk of bias in the included studies was assessed via the Cochrane Collaboration's RCT risk of bias tool. There were 7 assessed items: random sequence generation, allocation concealment, blinding of participants and intervention providers, blinding of outcome assessors, outcome completeness, selective reporting of outcomes, and other sources of bias, which were rated as low, unclear or high bias level. The assessment of included RCTs was separately conducted by two researchers, who then exchanged the results and checked. Disagreement would first be discussed by the two researchers, who would refer to the supervision researcher if they could not reach a consensus. Finally, the risk of bias map was drawn with Revman 5.3 and Office software.

Strategy of data synthesis: Categorical data (such as the overall clinical response rate) were to be combined and measured by relative risk (RR), and numerical data (such as neurological deficit score, the activity of daily living score, etc.) by standard mean difference (SMD), whose 95% of confifidence interval (CI) was calculated. The heterogeneity of the included studies was measured by the chi-square test (with a significant level of 0.1) and judged by the value of I2 at the same time. During the meta-analysis, when statistically significant heterogeneity (P50%) was shown, the random effect model would be chosen; otherwise (P≥0.10 or I2≤50%) the fixed effect model would be applied. For significant heterogeneity, subgroup or sensitivity analysis or only descriptive analysis was conducted to deal with the data. If more than ten studies were concerned with one certain variable, the publication bias would be assessed by a funnel plot and Egger's test. The above data analyses were done with the help of Software STATA (Version14.0, Stata, Corp, College Station, TX).

Subgroup analysis: Due to the significant heterogeneity of total clinical efficacy, subgroup analysis was conducted based on the following variables: area (developed vs. developing areas), publication year (before vs. and after 2015), sample size (less vs. no less than 100), and male to female ratio (below vs. not below one).

Sensitivity analysis: For significant heterogeneity, subgroup or sensitivity analysis or only descriptive analysis was conducted to deal with the data.

Country(ies) involved: China.

Keywords: Panax notoginseng saponins, the Elderly, Stroke, Randomized control trials, Meta-analysis.

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