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Meta analysis of the effect of Tongxinluo capsule on vascular endothelial function in patients with coronary heart disease

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Corresponding author:

Chenhao ZHANG

zhangch500@126.com

Author Affiliation:

Shunyi Hospital, China Academy of Chinese Medical Sciences.

Gao, ML¹; Ren, RH²; Liu, YY³; Wang, J⁴; Zhang, CH⁵

ADMINISTRATIVE INFORMATION

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

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 30 June 2023 and was last updated on 30 June 2023.

INTRODUCTION

Review question / Objective To systematically evaluate the effect of Tongxinluo capsules on vascular endothelial function in patients with coronary heart disease.

Condition being studied To systematically evaluate the effect of Tongxinluo capsules on vascular endothelial function in patients with coronary heart disease.

METHODS

Search strategy Search Wan Fang Data, China National Knowledge Infrastructure, Weipu Database, China Biomedical Literature Database, PubMed, ScienceDirect, Cochrane Library, all of which were established until January 30, 2023. Chinese search subject terms: "coronary heart disease", "angina", "Tongxinluo capsule", "vascular endothelial function"; English search

subject words: coronary heart disease, Tongxinluo, Tongxinluo capsule. Relevant journal articles were handsearched. Two review authors independently read and screened the collected literature, assessed the quality of the included studies using the risk of bias assessment tool provided by Cochrane System, and meta-analysed using Stata16.1 software.

Participant or population meta-analysis, 41 randomized controlled trials with a total of 4124 cases were included.

Intervention meta-analysis, 41 randomized controlled trials with a total of 4124 cases were included.

Comparator State16.1.

Study designs to be included (1) clinical randomized controlled trials (RCTs), whether blinded or not; (2) Patients clinically diagnosed with coronary heart disease have no other serious organ damage, and there is no restriction on race,

gender, and age; (3) the baseline situation of patients in the observation group and the control group was comparable; (4) The case data is complete, and the language is limited to Chinese and English; (5) Outcome measures included: vascular endothelial growth factor (VEGF), nitric oxide (NO), serum endothelin (ET), vascular endothelial dependent dia.

Eligibility criteria (1) non-clinical randomized controlled trials; (2) a controlled trial of interventions combined with other traditional Chinese medicines, traditional Chinese medicine ingredients or traditional Chinese medicine treatment on the basis of Tongxinluo; (3) Incomplete literature and unreasonable scheme; (4) Basic research such as animal testing; (5) low-quality studies (e.g. inconsistent study data, incomplete data, etc.).

Information sources Wan Fang Data, China National Knowledge Infrastructure, Weipu Database, China Biomedical Literature Database, PubMed, ScienceDirect, Cochrane Library.

Main outcome(s) Finally, 41 randomized controlled trials with a total of 4124 cases were included. The results of meta-analysis showed that the serum endothelin (ET) and low-density lipoprotein (LDL) levels of Tongxinluo capsules combined with conventional western medicine treatment (control group) were reduced ($P < 0.05$) compared with conventional western medicine treatment (control group). Vascular endothelial growth factor (VEGF), nitric oxide (NO), and vascular endothelial-dependent diastolic function (FMD) were all elevated ($P < 0.05$).

Quality assessment / Risk of bias analysis Risk of bias assessment was performed for each RCT using the Cochrane Risk of Bias Assessment Tool in Revman 5.4.

Strategy of data synthesis State16.1 software was used for meta-analysis of data from the included literature. The outcomes included in this review were all continuous and expressed as 95% confidence intervals (95% CI) using mean differences (MD). The pooled effect size was calculated, and the Q test for heterogeneity of the outcome measures was performed on a random-effects model if $P \leq 0.05$, $I^2 \geq 50\%$, and vice versa, it was heterogeneous and used a fixed-effect model. Publication bias was then assessed, the Egger regression method was used to calculate the bias, represented by a funnel plot, and finally its sensitivity was analyzed.

Subgroup analysis No.

Sensitivity analysis In meta-analysis of each outcome, subsequent sensitivity analyses were excluded one by one and the pooled effect sizes were not significantly changed and the results were relatively stable.

Country(ies) involved China.

Keywords Coronary heart disease; Tongxinluo capsules; Vascular endothelial function; Meta-analysis.

Contributions of each author

Author 1 - meili GAO.

Email: 13161940199@163.com

Author 2 - Ruhua REN.

Email: rrh2280248750@163.com

Author 3 - Yiyi LIU.

Email: 18810058852liuyiyi@163.com

Author 4 - Jia WANG.

Email: 3029197756@qq.com

Author 5 - ZHANG Chenhao.