INPLASY PROTOCOL

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Corresponding author:
Zeng-mian Wang

Zengmwang1980@outlook.com

Author Affiliation:
First Affiliated Hospital of Jiamusi University

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Review Stage at time of this submission: **The review has not yet started**

Conflicts of interest: **None.**

Association between serum lipoprotein levels and neurological function in patients with acute ischemic stroke: a protocol of systematic review and meta-analysis

Jiang, YJ[1]; Wang, ZM[2]; Wang, ZY[3]; Wei, CJ[4].

Review question / Objective: **Is serum lipoprotein levels (SLL) associated with neurological function(NF) in patients with acute ischemic stroke (AIS)?**
Condition being studied: **Serum lipoprotein levels, neurological function, and acute ischemic stroke.**
Information sources: **We will comprehensively search the following electronic databases of PubMed, EMBASE, Cochrane Central Register of Controlled Trials, Web of Science, and Chinese Biomedical Literature Database, China National Knowledge Infrastructure from inception to the February 29, 2020 with no language and publication date restrictions. The detailed search strategy for PubMed is summarized. Search strategies for other electronic databases will be modified based on this strategy. In addition, relevant conference abstracts, ongoing trials from clinical trial registries, and reference lists of included studies will be searched.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 08 April 2020 and was last updated on 08 April 2020 (registration number INPLASY202040043).

INTRODUCTION

Review question / Objective: **Is serum lipoprotein levels (SLL) associated with neurological function(NF) in patients with acute ischemic stroke (AIS)?**

Condition being studied: **Serum lipoprotein levels, neurological function, and acute ischemic stroke.**

METHODS

Participant or population: **We will include participants who were diagnosed as AIS, or normal healthy subjects, irrespective their country, race, gender, and age.**

Intervention: **All participants in the experimental group had AIS.**

Comparator: All subjects in the control group were health participants without AIS.

Study designs to be included: All CCSs on investigating the associations between SLL and NF will be included with no limitations of language and publication time.

Eligibility criteria: All CCSs on investigating the associations between SLL and NF in AIS patients and normal healthy subjects.

Information sources: We will comprehensively search the following electronic databases of PubMed, EMBASE, Cochrane Central Register of Controlled Trials, Web of Science, and Chinese Biomedical Literature Database, China National Knowledge Infrastructure from inception to the February 29, 2020 with no language and publication date restrictions. The detailed search strategy for PubMed is summarized. Search strategies for other electronic databases will be modified based on this strategy. In addition, relevant conference abstracts, ongoing trials from clinical trial registries, and reference lists of included studies will be searched.

Main outcome(s): The primary outcomes are SLL, as detected by enzyme linked immunosorbent assay, and NF, as measured by National Institutes of Health Stroke Scale or other relevant scales.

Additional outcome(s): The secondary outcomes are fasting blood glucose, triglycerides, total cholesterol, low density lipoprotein cholesterol, high density lipoprotein cholesterol, systolic blood pressure, diastolic blood pressure, and uric acid.

Data management: Two independent authors will perform data extraction from all eligible studies. Any confusion will be cleared up through discussion with the help of another author. For each included study, the following data will be collected: title, first author, time of publication, country, participant's age, gender, race, severity of AIS, study setting, study design, sample size, outcomes, follow-up information, results, findings, and conflict of interest.

Quality assessment / Risk of bias analysis: Study quality of CCSs article will be assessed by two independent authors using Newcastle-Ottawa Scale. Any doubt between two authors will be figured out by consulting another experienced author, and a consensus will be reached.

Strategy of data synthesis: We will employ RevMan 5.3 software to synthesize and analyze data. All continuous data will be recorded as mean difference or standardized mean difference and 95% confidence intervals (CIs), while all dichotomous data will be calculated as risk ratio or rate ratio and 95% CIs. We will examine the statistical heterogeneity using I^2 test. $I^2 \leq 50\%$ suggests homogeneity, and a fixed-effects model will be utilized. $I^2 > 50\%$ shows remarkable heterogeneity, and a random-effects model will be employed. If there is homogeneity across sufficient included studies, we will carry out a meta-analysis. If there is obvious heterogeneity among eligible studies, we will perform a subgroup analysis to investigate the sources of heterogeneity. If necessary, we will also conduct a narrative summary.

Subgroup analysis: If data are available, a subgroup analysis will be performed to detect sources of obvious heterogeneity regarding the types of participants, and outcome indicators.

Sensibility analysis: In the case of sufficient data, a sensitivity analysis will be conducted to test the robustness of study findings regarding the methodological quality and missing data of all eligible studies.

Country(ies) involved: China.

Keywords: Serum lipoprotein levels; neurological function; acute ischemic stroke; association.