INPLASY PROTOCOL

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

Conflicts of interest: **None.**

Efficacy of surgery for the treatment of astrocytoma: a protocol of systematic review and meta-analysis

Wang, GW[1]; Li, BM[2].

Review question / Objective: **Does surgery effectively treat patients with astrocytoma?**
Condition being studied: **Astrocytoma; surgery.**
Information sources: **MEDLINE, EMBASE, Cochrane Library, CINAHL, PsycINFO, and China National Knowledge Infrastructure will be searched from their inception to the March 1, 2020. We will not impose any limitations of language and publication status. The search strategy was built with the assistance of a professional librarian. The provisional MEDLINE search strategy is presented. We will also modify similar search strategies to the other electronic databases. Additionally, we will also search Google scholar, conference abstracts, and reference lists of included studies to avoid missing any potential eligible trials.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 27 April 2020 and was last updated on 27 April 2020 (registration number INPLASY202040194).

INTRODUCTION

Review question / Objective: **Does surgery effectively treat patients with astrocytoma?**

Condition being studied: **Astrocytoma; surgery.**

METHODS

Participant or population: **All patients who were diagnosed as astrocytoma will be considered for inclusion in this study. We will not apply any restrictions of race, age, sex, education background, and economic status.**

Intervention: **All subjects in the experiment group underwent surgery for the treatment of astrocytoma.**

Comparator: All patients in the control group who received any types of therapies will be included in this study.

Study designs to be included: This study will only consider randomized controlled trials (RCTs) that assessing the efficacy and complications of surgery for astrocytoma.

Eligibility criteria: This study will only consider randomized controlled trials (RCTs) that assessing the efficacy and complications of surgery for the treatment of patients with astrocytoma.

Information sources: MEDLINE, EMBASE, Cochrane Library, CINAHL, PsycINFO, and China National Knowledge Infrastructure will be searched from their inception to the March 1, 2020. We will not impose any limitations of language and publication status. The search strategy was built with the assistance of a professional librarian. The provisional MEDLINE search strategy is presented. We will also modify similar search strategies to the other electronic databases. Additionally, we will also search Google scholar, conference abstracts, and reference lists of included studies to avoid missing any potential eligible trials.

Main outcome(s): The primary outcomes include overall survival and pathological complete response. The secondary outcomes consist of recurrence-free survival; disease-free survival; quality of life, as assessed any Health-Related Quality of Life scales; and complications.

Data management: All essential data will be extracted using previously created data collection sheet by two independent authors. Discrepancies in data collection between two authors will be settled down through discussion with the help of another author. We will extract the following information: study characteristics (first author, year of publication, country, study setting, et al), participants (race, age, gender, eligibility criteria, et al), study methods (sample size, randomization, blind, et al), details of interventions and controls (types of treatment, delivery method, duration, frequency, dosage, et al), outcomes (all primary and secondary outcome measurements, complications, et al), and funding details.

Quality assessment / Risk of bias analysis: Two independent authors will assess all risk of bias for each study using Cochrane Risk of Bias Tool, regardless of their methodological quality. It rates selection, performance, detection, attrition, reporting and other bias for each included study. Then, each item will be further graded as low, unclear or high risk of bias. All disagreements will be solved through discussion by another author.

Strategy of data synthesis: Synthesis of the data will be undertaken using RevMan 5.3 software. All quantitative data will be expressed using mean difference or standardized mean difference and 95% confidence intervals (CIs). All dichotomous data will be calculated using risk ratio and 95% CIs. We will use I^2 index to assess the proportion of heterogeneity among studies. The values of I^2 ≤50 show acceptable homogeneity, and we will exert a fixed-effects model for data pooling. On the other hand, the values of I^2 >50% mean significant heterogeneity, and we will employ a random-effects model for data synthesizing. If it is possible, we will perform meta-analysis to analyze the pooled outcome data when acceptable homogeneity has been identified. Otherwise, we will conduct subgroup analysis to investigate potential causes for substantial heterogeneity among eligible studies.

Subgroup analysis: We will carry out subgroup analysis according to the study characteristics, study methods, interventions, comparators, and outcomes.

Sensibility analysis: We will operate sensitivity analysis to identify the robustness of merged outcome results by removing high risk of bias studies.

Country(ies) involved: China.

Keywords: Astrocytoma; surgery; efficacy; complications.