

INPLASY PROTOCOL

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

Conflicts of interest:
None.

Risk factors for posttraumatic hydrocephalus: A systematic review and meta-analysis

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Review question / Objective: Post-traumatic hydrocephalus (PTH) is an important cause of morbidity after traumatic brain injury, which affects the patients' long-term outcomes. The risk factors associated with PTH still remain unclear. The purpose of this study was to evaluate the factors lead to hydrocephalus between PTH and none-PTH after sever brain trauma.

Condition being studied: Posttraumatic hydrocephalus, a common complication and an important cause of disability after brain trauma.

Information sources: PubMed, Embase, Web of Science, and Cochrane Library and China databases(CNKI, VIP, and Wanfang) were searched. The databases were searched from 1983 to April 2020. The searches would be re-run and new studies will be included before the final analyses. Unpublished studies will not be included.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 26 April 2020 and was last updated on 26 April 2020 (registration number INPLASY202040180).

INTRODUCTION

Review question / Objective: Post-traumatic hydrocephalus (PTH) is an important cause of morbidity after traumatic brain injury, which affects the patients' long-term outcomes. The risk factors associated with PTH still remain unclear. The purpose of this study was to

evaluate the factors lead to hydrocephalus between PTH and none-PTH after sever brain trauma.

Condition being studied: Posttraumatic hydrocephalus, a common complication and an important cause of disability after brain trauma.

METHODS

Search strategy: Search using key terms “hydrocephalus” and (“head trauma” or “traumatic head” or “head injury” or “brain injury” or “brain trauma” or “traumatic brain” or “traumatic brain injury”).

Participant or population: Patients with confirmed hydrocephalus after cerebral trauma.

Intervention: Hydrocephalus after traumatic brain injury

Comparator: None-hydrocephalus after traumatic brain injury.

Study designs to be included: Case-control, cohort or cross-sectional methodology.

Eligibility criteria: Patients with confirmed hydrocephalus after cerebral trauma, and excluded patients with brain atrophy.

Information sources: PubMed, Embase, Web of Science, and Cochrane Library and China databases (CNKI, VIP, and Wanfang) were searched. The databases were searched from 1983 to April 2020. The searches would be re-run and new studies will be included before the final analyses. Unpublished studies will not be included.

Main outcome(s): hydrocephalus after traumatic brain injury.

Quality assessment / Risk of bias analysis: Two authors will independently assess the quality and risk of bias of the included studies. The Agency for Healthcare Research and Quality (AHRQ) Methodology Checklist will be used to assess the quality of CrossSectional studies, the Newcastle-Ottawa Scale (NOS) will be used to assess the quality of cohort studies. In case of any inconsistencies, the agreement will be reached through discussion among all the authors.

Strategy of data synthesis: We will calculate the odds ratio (OR) to measure

the treatment effect for the dichotomous outcomes with corresponding 95% confidence intervals (CI). It should be noted that the generic inverse variance method will be used when the included study reported only the odds ratio (OR) and its standard error. Clinical heterogeneity across the studies will be assessed by examining the details of the subjects, the baseline data, and the interventions and the outcomes to determine whether the studies are sufficiently similar. Statistical heterogeneity will be determined using the I-squared statistic and the Chi-square test. We will use a funnel plot to assess for reporting bias.

Subgroup analysis: When it is available, we will take an analysis of subgroup according to characteristics, such as race, study location and age.

Sensitivity analysis: By subgroup analysis.

Language: No language restrictions..

Country(ies) involved: China.

Keywords: Risk factors, hydrocephalus, traumatic brain injury, meta analysis.

Contributions of each author:

Author 1 - Tao Li - Author 1 drafted the manuscript

Author 2 - Handong Wang

Author 3 - Haichen Sun - The author contributed to the development of the selection criteria, and the risk of bias assessment strategy.

Author 4 - Chaochao Gao - The author read, provided feedback and approved the final manuscript.

Author 5 - Yong-qiang Li - The author provided statistical expertise.

Author 6 - Meng-liang Zhou - The author provided statistical expertise.