INPLASY PROTOCOL

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None declared.

Risk Factors of Hepatic Encephalopathy after Transjugular Intrahepatic Portosystemic Shunt: An Updated Systematic Review and Meta-analysis

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Review question / Objective: **The aim of this systematic review and meta-analysis is to evaluate the risk factors for hepatic encephalopathy after transjugular intrahepatic portosystemic shunt.**
Condition being studied: **Transjugular intrahepatic portosystemic shunt (TIPS) has become an important treatment for complications associated with portal hypertension, significantly improving patients' quality of life and prolonging liver transplant-free survival.**
Hepatic encephalopathy (HE) is one of the most common complications in patients after TIPS, with an incidence rangs from 10% to 50%. Post-TIPS HE is associated with increased readmission rate and mortality of the patients. In order to reduce the incidence of post-TIPS HE, it is crucial to effectively identify risk factors so as to take some measures. Though many studies have analyzed the risk factors of post-TIPS HE, the results and qualities of these studies are varied and the latest evidence is lack. This study aims to provide updated proof of systematic review to evaluate the risk factors of post-TIPS HE.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 16 March 2023 and was last updated on 16 March 2023 (registration number INPLASY202330056).

INTRODUCTION

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METHODS

Search strategy: The search keywords were "transjugular intrahepatic portosystemic shunt" AND "hepatic encephalopathy" AND "risk factors". The search strategies were combined with subject words and free words.

Participant or population: Patients confirmed with overt HE after TIPS.

Intervention: HE after TIPS.

Comparator: none HE after TIPS.

Study designs to be included: Case-control studies and cohort studies.

Eligibility criteria: The inclusion criteria included: (1) Adult patients (>18 years) who have undergone TIPS for complications of portal hypertension; (2) Overt HE after TIPS was clearly diagnosed; (3) Case-control studies and cohort studies that reported the risk factors of post-TIPS HE; (4) univariate and multivariate analyses of risk factors for post-TIPS HE were performed.The inclusion criteria included: (1) the article style was undesirable (e.g. review articles, case reports, letters, guidelines, editorials and comments); (2) Republished, unrelated studies or animal experiments; (3) studies with small sample size (less than 30 cases);(4) unclear data descriptions, unclear data sources or unable to obtain the full texts.

Information sources: PubMed, Embase, Web of Science, Cochrane Library, OVID, Scopus, ProQuest and four Chinese databases (CBM, CNKI, VIP, and Wanfang) were searched. The databases were searched from each database conception to March 2023.

Main outcome(s): Risk factors for post-TIPS HE.

Data management: NoteExpress.

Quality assessment / Risk of bias analysis: The Newcastle-Ottawa Scale (NOS) is used to evaluate the study quality, and above 6 stars obtained is of high quality. The funnel plot is used to detect publication bias.

Strategy of data synthesis: Heterogeneity between studies will be assessed with the I^2 statistic. Heterogeneity is acceptable when I^2 50%, and we will use subgroup analysis, and sensitivity analysis to explore the causes. If the source of heterogeneity still unable to be find, we will use random effect model to estimate or descriptive analysis. Binary variables will be expressed using the odds ratio (OR) with 95% confidence interval (CI) and continuous variables by the weighted mean difference (WMD) with 95% CI.

Subgroup analysis: Subgroup analysis will be conducted to reduce the random variations between the estimates of the primary study, and based on the different age and gender of participants.

Sensitivity analysis: If the combined results of the remaining studies are not significantly different from those without deletion after deleting any of them, it means that the sensitivity analysis is passed.

Country(ies) involved: China.

Keywords: transjugular intrahepatic portosystemic shunt; hepatic encephalopathy; risk factors; systematic review; meta-analysis.

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