INPLASY PROTOCOL

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Affiliated Hospital of Southwest Medical University, Luzhou City, Sichuan Provin.

The efficacy of parenteral nutrition(PN) and enteral nutrition(EN) supports in cirrhosis: A systematic review and network meta-analysis

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Review question / Objective: **Why start this article? Multiple nutritional therapies are currently available for patients with liver cirrhosis.**
Condition being studied: **To evaluate the improvement of nutritional indicators and liver function indexes of liver cirrhosis treated with different nutrition intervention.**
Information sources: **We searched PubMed, Embase.com and Cochrane Library database up to April 3rd ,2020. After eliminating the duplicated or overlapping reports, 6 studies were included. We performed a Bayesian network meta-analysis by Stata 12.0 and GeMTC 0.14.3 in order to compare different nutritional interventions with consistency model.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 28 May 2020 and was last updated on 28 May 2020 (registration number INPLASY202050104).

INTRODUCTION

Review question / Objective: **Why start this article? Multiple nutritional therapies are currently available for patients with liver cirrhosis.**

Condition being studied: **To evaluate the improvement of nutritional indicators and liver function indexes of liver cirrhosis treated with different nutrition intervention.**

METHODS

Participant or population: **Overall, six observational studies from different countries enrolling a total of 1154 patients who received different nutritional strategies were included in this analysis.**

Intervention: EN, PN, EN + PN, EN+ intestinal probiotics, EN(without BCAAs), LES, EN+ LES, no LES.

Comparator: PN + EN vs EN; PN + EN vs PN; EN + intestinal probiotics vs EN; EN + intestinal probiotics vs PN; EN + LES vs LES; EN + LES vs EN.

Study designs to be included: Randomized clinical trials comparing 2 or more therapies in patients with cirrhosis were evaluated.6 RCTs met the selection criteria.

Eligibility criteria: With different nutritional interventions; comparators: any of the above mentioned treatment strategy; outcome: BMI, Child-Pugh score, MELD score, TBIL, ALT, AST, TP, Triceps skinfold, MAMC, Fischer ratio, Overall survival. The study with multiple arms was preferred as much as possible so as to build comparative loops in network meta-analysis.

Information sources: We searched PubMed, Embase.com and Cochrane Library database up to April 3rd ,2020. After eliminating the duplicated or overlapping reports, 6 studies were included. We performed a Bayesian network meta-analysis by Stata 12.0 and GeMTC 0.14.3 in order to compare different nutritional interventions with consistency model.

Main outcome(s): BMI, Child-Pugh score, MELD score, TBIL, ALT, AST, TP, Triceps skinfold, MAMC, Fischer ratio, Overall survival.

Quality assessment / Risk of bias analysis: The Cochrane risk of bias assessment tool was used to assess the methodological quality of individual studies,based on the following aspects: random sequence generation; allocation concealment; blinding of participants and personnel; blinding of outcome and assessment; incomplete outcome data; selective reporting; and other bias. Each item was answered with high, low,or unclear risk of bias, and disagreements were resolved through open discussion or a third reviewer.

Strategy of data synthesis: Two investigators independently reviewed the full manuscripts of eligible studies and extracted information into an electronic database: patients' characteristics study design, interventions, the number of events of interest in each group.

Subgroup analysis: Summary measures were calculated as weighted mean difference(WMD), together with 95% confidence intervals (CIs), which was pooled using Stata 12.0 software. T Bayesian network meta-analysis was performed to simultaneously compare all interventions in the network. The network meta-analysis can be considered to be an extension of the traditional pair-wise meta-analysis, as it incorporates both direct and indirect information through a common comparator to obtain estimates of the relative interventional effects on the multiple interventions comparisons, which was performed by using the automated software Gemtc.

Sensibility analysis: Based on Bayesian evidence network, we evaluated consistency by combining the estimates from direct and indirect comparisons.The random effect variance and inconsistency random effect variance were also used to analyse the consistency. The rank accumulate probability plot produced by the network meta analysis was to find out which administered intervention is the best. Node-splitting models were conducted to assess whether direct and indirect effect is in agreement.

Country(ies) involved: China.

Keywords: nutritional intervention; cirrhosis; parenteral nutrition; enteral nutrition.

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