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Meta-analysis of the effects of probiotic-assisted therapy on liver function and intestinal flora in patients with cirrhosis

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ADMINISTRATIVE INFORMATION

Support - No.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 20 July 2023 and was last updated on 20 July 2023.

INTRODUCTION

Review question / Objective By integrating relevant randomized controlled studies at home and abroad, this study investigated the effects of addition of probiotics on liver function and intestinal flora in patients with cirrhosis based on conventional treatment and traditional conventional treatment.

Condition being studied Cirrhosis is a common disease with multiple causes that is a serious threat to public health and is characterized by chronic, progressive and diffuse liver lesions. Patients with cirrhosis all have a mild or severe imbalance of intestinal flora. Studies have found that probiotics can reduce the voluntary movement of colonic bacteria, maintain intestinal barrier integrity and improve liver function.

METHODS

Participant or population patient with liver cirrhosis.

Intervention Conventional treatment and probiotics.

Comparator Conventional treatment (symptomatic treatment such as liver protection, diuretic, nutritional support).

Study designs to be included RCT.

Eligibility criteria Referring to the diagnostic criteria for posthepatic cirrhosis in the Guidelines for the Prevention and Treatment of Hepatitis B and Hepatitis C formulated by the Hepatology Society of the Chinese Medical Association in 2010 and 2004 respectively, The diagnostic criteria for alcoholic cirrhosis in the Diagnostic Criteria for Alcoholic Liver Disease formulated in 2003, the diagnostic criteria for alcoholic cirrhosis in the Diagnostic Guidelines for Alcoholic Liver Disease formulated by the Hepatology Society of the Chinese Medical Association in 2010, and the diagnostic criteria for liver cirrhosis in the Chronic

Hepatitis B Prevention and Treatment Guidelines in 2010.

Information sources Wanfang Data Knowledge Service Platform, CNKI, China Science and Technology Journal Database, SinoMed, Cochrane Library, Web of Science, PubMed, Embase.

Main outcome(s) (1) Endotoxin (EU/ml), (2) Liver function: alanine aminotransferase (ALT) in U/L, aspartate aminotransferase (AST) in U/L, total bilirubin (TBIL) in $\mu\text{mol/ml}$, albumin (ALB) in g/L, intestinal flora in IgCFU/g.

Quality assessment / Risk of bias analysis Cochrane bias risk assessment tool.

Strategy of data synthesis Software RevMan5.3 was used solely for data analysis. The selected outcome indicators were all continuous variables, and the measurement methods and units of each indicator were the same. Weighted Mean Difference (WMD) and 95% Confidence Interval (CI) were used as effect sizes for data analysis. I^2 was used to test the size of the evaluation heterogeneity. If $P > 0.1$ and $I^2 \leq 50\%$, the fixed effects model was chosen; if $P \leq 0.1$ and $I^2 > 50\%$, the random effects model was selected. The difference was statistically significant at $P < 0.05$.

Subgroup analysis Subgroup analysis was performed according to the administration of doctor's bacteria ≤ 15 days, > 15 days.

Sensitivity analysis RevMan software carried out sensitivity analysis to reflect the sensitivity of the literature through the change of effect size after deleting one of the literatures.

Country(ies) involved China.

Keywords Probiotics, Cirrhosis, Liver function, Bacterial group of intestinal tract, Meta-analysis.

Contributions of each author

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