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The efficacy of Traditional Chinese medicine compound decoction on immune function in patients with primary liver cancer: A systematic review and network pharmacology

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ADMINISTRATIVE INFORMATION

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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 18 December 2023 and was last updated on 18 December 2023.

INTRODUCTION

Review question / Objective To assess the efficacy of traditional Chinese medicine (TCM) compound decoction on immune function in patients with primary liver cancer (PLC). 1.Type of articles and participants: Randomized clinical trials (RCTs) and PLC. 2.Intervention and control: TCM compound decoction plus transarterial chemoembolization (TACE)/ hepatic artery infusion chemotherapy (HAIC). The control groups were treated with TACE or HAIC. 3.Observation indicators were as follows: 1) Included articles had to report on immune cells, including CD3+, CD4+, CD8+, CD4+/CD8+, and natural killer (NK) cells, as the outcome measure; 2) Other observation indicators: clinical response (World Health Organization (WHO)), 3) Karnofsky score improve rate; 4) Safety.

Rationale Some RCTs have showed that hepatic artery interventional therapy combined with TCM compound decoction is more effective than hepatic artery interventional therapy alone in treating advanced PLC, but it is still controversial in improving immune function.

Condition being studied It was predicted that by 2040, the number of cases and fatalities from PLC would increase by more than 55%. The low overall survival rate and poor quality of life of PLC are related to its easy recurrence and metastasis. Hepatic artery interventional therapy is still the best choice for advanced PLC patients, and hepatic artery interventional therapy alone still has limited ability to eradicate cancer tissue and generally has a high recurrence rate.

METHODS

Search strategy The following search terms (or Chinese database equivalent to Chinese) are used: "liver cancer OR liver neoplasms", "traditional Chinese medicine OR Chinese materia medica" and "randomized", "immune OR immune system", "randomized".

Participant or population Primary liver cancer.

Intervention TCM compound decoction plus TACE/HAIC.

Comparator TACE or HAIC.

Study designs to be included RCTs.

Eligibility criteria Not treated with an oral administration of TCM compound decoction; research on complications of PLC; Intervention measures included other treatments; The intervention in the control groups include TCM therapy; repetitive articles, plagiarized literature, incomplete data; articles on non-Chinese and English literature; case report, theoretical studies, review and experimental articles.

Information sources PubMed, Cochrane Library, and Embase, Web of Science and CNKI, Wanfang Data, VIP Database, and CBM Database was searched.

Main outcome(s) CD3+, CD4+, CD8+, CD4+/CD8+, natural killer (NK) cells, or cytokines (IL-2, IL-10, and IFN- γ), as the outcome measure.

Additional outcome(s) clinical response (WHO), KPS improve rate, Safety.

Quality assessment / Risk of bias analysis The methodological quality of the RCTs was appraised by the Cochrane risk of bias tool.

Strategy of data synthesis The dichotomous variables used Risk Ratio as the effect size measure, and continuous variables used the mean difference as the effect size measure. The results were calculated with 95% CIs. Moreover, heterogeneity between articles was assessed by the I² test. If the value of I² is more than 50%, the random-effects model or descriptive analysis was performed.

Subgroup analysis Not Applicable.

Sensitivity analysis Evaluate the combined results and heterogeneity after removing the included studies one by one.

Language restriction Chinese or English.

Country(ies) involved China.

Other relevant information Based on the network pharmacology, the common targets of PLC and TCM compound decoctions were screened, and associations between hub genes and tumor-infiltrating immune cells in PLC were explored.

Keywords compound decoction; TCM; liver cancer; randomized controlled trials; immune.

Contributions of each author

Author 1 - Wu Zhulin drafted the manuscript.

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