

TACE Combined with HIFU for Primary Hepatic Carcinomas: A Systematic review and Meta-Analysis

Li Zheng^{1,2}, Mi Deng-hai^{1,2,3}, Yang Ke-hu^{1,2}, Cao Nong², Tian Jin-hui¹, Liu Ya-li¹

(1) Evidence Based Medicine Center of Lanzhou University, Gansu Lanzhou 730000, China

(2) The First Hospital of Lanzhou University, Gansu Lanzhou 730000, China

(3) The Second People's Hospital of Gansu Providence, Gansu Lanzhou 730000, China

Objective

To evaluate the clinical efficacy and safety of transcatheter arterial chemoembolization (TACE) combined with High-intensity Focused Ultrasound (HIFU) for primary hepatic carcinomas (PHC), and to provide the reference for clinical practice and research.

Methods

We searched foreign databases as Cochrane Library, PubMed, EMBASE, Web of Science and Chinese ones as CBM, CNKI, VIP and Wanfang with computer and also retrieved other sources as supplying, such as tracing related references. All relevant randomized controlled trials (RCTs) were collected to compare combination therapy and TACE alone. After literature screening, data extraction and quality evaluation independently conducted by two authors according to the protocol, the meta-analyses were performed using the RevMan 5.1 software.

Results

15 RCTs were involved with 1103 patients included. Meta-analysis showed: The 0.5-1-2-3-5 -year overall survival rate and total effective rate in the combination therapy group were superior to TACE alone, and there were significant difference ($P < 0.05$); 0.5-year[HR=5.12,95%CI=(3.46,7.58)], 1-year [HR=3.03,95%CI=(2.26,4.06)], 2-year[HR=3.51,95%CI=(2.45,5.02)], 3-year [HR=3.60,95%CI=(2.42,5.37)], 5-year [HR=4.70,95%CI=(2.41,9.17)]. The incidences of combination therapy were lower than those of TACE alone on the indicators of Leukocytopenia, Nausea and Vomiting, Hepatic lesion, but there was statistically significant only on the indicators of Nausea and Vomiting. The incidences of fever was higher in the combination therapy group than the TACE alone group, and there were significant difference ($P < 0.05$).

Conclusion

Compared with the TACE alone, TACE combined with HIFU can improve long-term survival rate and short-term curative effect, and it's feasible. But its long-term survival rate and security still needs to be further verified by more large sample and high quality RCTs.

Keywords

Liver Neoplasms, High-intensity Focused Ultrasound, Transcatheter arterial chemoembolization, Systematic review, Meta-Analysis, Randomized controlled trial