INPLASY

Cryoablation versus radiofrequency ablation for hepatocellular carcinoma: a systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202610012

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 4 January 2026 and was last updated on 4 January 2026.

INTRODUCTION

Review question / Objective A meta-analysis was conducted to assess the efficacy and safety of cryoablation (CA) compared with radiofrequency ablation (RFA) for hepatocellular carcinoma (HCC).

Condition being studied Both CA and RFA have been reported for treatment for HCC. However, the relative clinical effectiveness and safety between the 2 methods are still unclear.

METHODS

Search strategy ((cryoablation) AND ((radiofrequency) OR (RFA))) AND (((hepatocellular carcinoma) OR (HCC)) OR (liver cancer)).

Participant or population Patients with HCC.

Intervention Patients who were treated by CA.

Comparator Patients who were treated by RFA.

Study designs to be included Comparative studies regarding CA vs. RFA for HCC.

Eligibility criteria Comparative studies regarding CA vs. RFA for HCC; Studies nust contained initial complete ablation rate.

Information sources PubMed, Wanfang, and The Cochrane Library.

Main outcome(s) Initial complete ablation rate.

Quality assessment / Risk of bias analysis The quality of RCTs was evaluated utilizing the Cochrane Collaborative Network Bias Risk Assessment Tool. Newcastle–Ottawa Scale (NOS) was used to evaluate the quality of cohort studies.

Strategy of data synthesis Data analysis for the meta-analysis was conducted using the Rev Man 5.3 statistical software. Categorical variables were compared based on pooled odds ratios (ORs) and 95% confidence intervals (CIs), while OS and stent

patency were analyzed based on the log[hazard ratio (HR)] and SE.

Subgroup analysis None.

Sensitivity analysis Yes.

Language restriction None.

Country(ies) involved China.

Keywords cryoablation; radiofrequency ablation; hepatocellular carcinoma.

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