
TACE-RFA vs Surgery for Late-Recurrent HCC: A Comparative Analysis



Hepatocellular carcinoma (HCC) remains one of the most prevalent and deadly malignancies worldwide. Among patients with small late-recurrent HCC, choosing an optimal treatment strategy is critical to improving survival and maintaining quality of life. Traditionally, surgical resection (SR) has been the primary curative approach, but less invasive methods such as transarterial chemoembolisation combined with radiofrequency ablation (TACE-RFA) have gained attention. The combination of these two techniques aims to improve tumour control while minimising the risks associated with surgery. A recent review published in *Radiology* examines the comparative effectiveness of TACE-RFA and SR based on recent clinical findings, with a focus on survival outcomes, recurrence patterns and complication rates.

Efficacy and Survival Outcomes

The effectiveness of a treatment for late-recurrent HCC is primarily assessed by its impact on overall survival (OS) and recurrence-free survival (RFS). The findings from a recent randomised clinical trial showed that patients treated with TACE-RFA and SR had similar OS rates at one, three and five years. Specifically, the five-year survival rate was 69% for patients in the TACE-RFA group and 76% for those in the SR group. The differences between these rates were not statistically significant, indicating that both treatments offer comparable long-term survival benefits.

Recurrence-free survival, another crucial measure of treatment efficacy, also showed no meaningful difference between the two groups. The five-year RFS rate was 24% in the TACE-RFA group and 29% in the SR group, suggesting that neither treatment had a clear advantage in preventing recurrence. The results indicate that, despite SR being widely regarded as the standard of care, TACE-RFA is a viable alternative that can achieve similar long-term survival outcomes. The combination of transarterial chemoembolisation with radiofrequency ablation enhances local disease control by restricting tumour blood flow while increasing the effectiveness of thermal ablation, potentially improving the overall treatment response.

Recurrence and Treatment Considerations

Tumour recurrence remains a significant challenge in HCC management, even after curative-intent treatment. In the study, recurrence was observed in 70% of patients who underwent SR and 67% of those treated with TACE-RFA. The recurrence-free interval was similar in both groups, reinforcing the notion that neither treatment offers a distinct advantage in delaying disease progression.

However, differences emerged in the pattern of recurrence. Patients treated with TACE-RFA exhibited a higher rate of local recurrence than those who underwent SR. This suggests that SR may provide better local tumour control, potentially reducing the likelihood of regrowth at the original tumour site. Despite this, patients in the TACE-RFA group were more likely to receive additional curative interventions after recurrence. These included further sessions of ablation, surgery or radiation therapy. The ability to undergo repeat minimally invasive treatments without the risks associated with major surgery may provide an important advantage for patients who are unsuitable for repeated resections.

Another factor influencing treatment choice is the risk associated with repeat hepatectomy. Liver resection can be complicated by postoperative adhesions and impaired liver function, particularly in patients with underlying cirrhosis. In such cases, TACE-RFA may be preferable, offering a comparable survival benefit without exposing patients to the risks associated with repeated liver surgeries. The findings suggest that, while SR may be more effective in achieving local disease control, TACE-RFA offers greater flexibility in treating recurrence while preserving liver function.

Safety and Complication Rates

One of the key advantages of TACE-RFA is its minimally invasive nature, which contributes to a lower risk of complications compared to SR. In the clinical trial, the overall incidence of complications was significantly higher in the SR group, affecting 41% of patients, whereas only 24% of those in the TACE-RFA group experienced complications. Major complications, such as intra-abdominal bleeding and severe liver dysfunction, were more frequently observed following SR than after TACE-RFA. The risk of thrombocytopenia and other postoperative complications was

also higher in the SR group, further underscoring the increased surgical burden associated with resection.

Importantly, there were no recorded deaths within 30 days of treatment in either group, demonstrating that both treatment approaches are generally safe when performed in experienced centres. However, given the significant difference in complication rates, TACE-RFA may be a preferable option for patients with compromised liver function or other comorbidities that increase surgical risk. The reduction in severe complications highlights the potential benefits of using a less invasive strategy in carefully selected patients.

For patients with small late-recurrent HCC, the choice between TACE-RFA and SR depends on multiple factors, including the risk of recurrence, the potential for repeated interventions and individual patient characteristics. The findings indicate that TACE-RFA provides long-term survival outcomes similar to those of SR while reducing the incidence of major complications. Although local recurrence is more frequent with TACE-RFA, the possibility of undergoing further curative treatments may offset this disadvantage.

While SR remains the standard approach, the results suggest that TACE-RFA represents a viable alternative, particularly for patients who may not be suitable candidates for surgery. Further research is needed to refine patient selection criteria and explore additional strategies to enhance treatment efficacy. A personalised approach that balances survival benefits with procedural risks will be essential in optimising outcomes for patients with late-recurrent HCC.

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