

Chemoembolization for Renal Cell Carcinoma: Revisiting an Underexplored Locoregional Therapy

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Background

- Transarterial chemoembolization (TACE) is a novel locoregional therapy for renal cell carcinoma (RCC). It involves directly delivering a chemotherapeutic agent, typically doxorubicin or platinum-based drugs, into the arterial supply of a renal tumor.
- Subsequently, embolic agents are introduced to induce ischemia and enhance local cytotoxicity. While TACE is well-established in hepatocellular carcinoma, its role in RCC remains less defined.

Purpose: This exhibit aims to assess the feasibility, safety, and cytoreductive efficacy of TACE in treating RCC.

Methods

A systematic review of PubMed full text English articles was conducted to assess for the use of TACE in Renal Cancer.

Evaluated outcomes included progression-free survival (PFS) and overall survival (OS), change in symptomatology and adverse effects (AE).

Comparative analyses with transarterial embolization (TAE) were also conducted.

Results

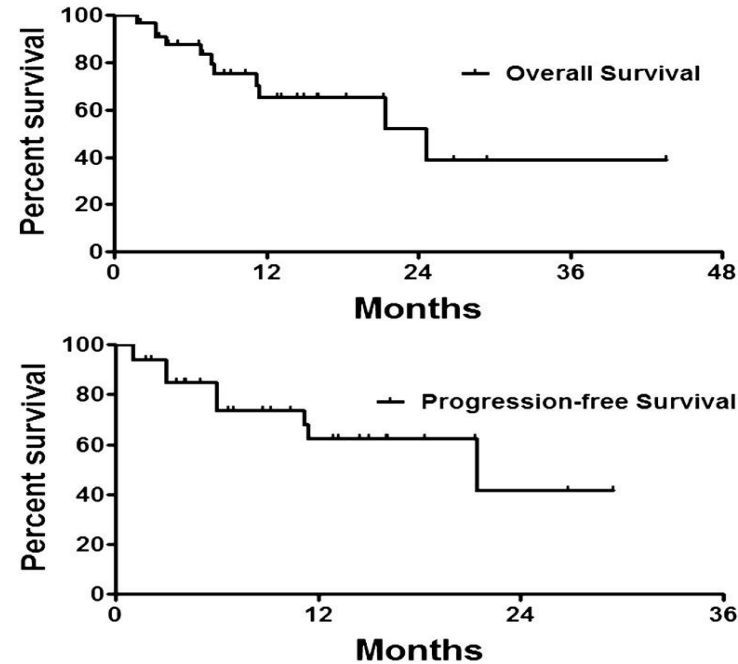


Figure 1: Adapted from Bi et al. Kaplan-Meier survival curve showing the OS and PFS of patients treated with doxorubicin-loaded TACE.

- Bi et al. studies indicated that the median OS and PFS were 24.6 and 21.4 months, respectively, among 35 patients treated with doxorubicin-loaded TACE for unresectable RCC. No serious adverse events, including perioperative deaths or treatment-related adverse events, were reported (**Figure 1**).
- Karalli et al. showed that Drug-eluting embolic (DEE) transarterial chemoembolization (TACE) demonstrates a significantly greater cytoreductive effect compared to transarterial embolization (TAE). In a cohort of six patients treated with DEE-TACE, the mean necrosis rate assessed by CT imaging was 88.3% (range: 70%–100%), significantly higher than the 29.4% (range: 0%–77%) observed in five patients treated with TAE ($P = 0.018$).

Conclusion

TACE serves as a safe and effective cytoreductive and palliative treatment option for certain patients with renal cell carcinoma (RCC), especially those who are not candidates for surgery.

However, its long-term oncologic outcomes remain limited. The application of TACE should be tailored to individual patients, and additional prospective studies are necessary to elucidate its effects on long-term oncologic outcomes.

References

1. Karalli A, Ghaffarpour R, Axelsson R, Lundell L, Bozoki B, Brismar T, et al. Transarterial Chemoembolization of Renal Cell Carcinoma: A Prospective Controlled Trial. *J Vasc Interv Radiol JVIR*. 2017;28:1664–72.
2. Bi Y, Shi X, Ren J, Yi M, Han X. Transarterial chemoembolization of unresectable renal cell carcinoma with doxorubicin-loaded CalliSpheres drug-eluting beads. *Sci Rep*. 2022;12:8136.