Comparative Outcomes of DEBIRI-TACE and Y-90 TARE in Unresectable Colorectal Metastases: A Review of Recent Evidence

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Introduction

- Colorectal liver metastases (CRLM) remain a major challenge in oncology and are often unresectable.
- Locoregional therapies such as drug-eluting beads irinotecan transarterial chemoembolization (DEBIRI-TACE) and radioembolization (TARE) have offer targeted treatment [1-4]
- These therapies have distinct roles in managing liver-dominant disease

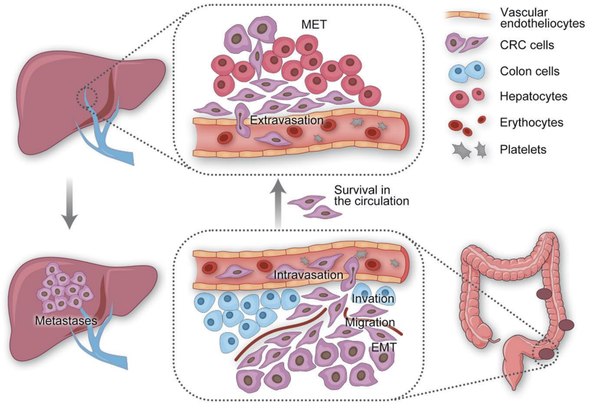

Figure 1. Biology of Colorectal Liver Metastasis (*Zhou et al., 2022*).

Purpose

- To compare the clinical outcomes, safety, and therapeutic roles of DEBIRI-TACE and TARE in patients with unresectable CRLM, using recent trials and expert guidelines.

Methods

- A focused review of prospective trials, registries, and meta-analyses published between 2020 and 2025, was conducted: DREAM, RESIN, SIRFLOX, and FOXFIRE [1-5]
- Data were synthesized to compare survival, tumor response, and toxicity profiles, with insights from clinical guidelines and expert consensus [6,7]

Results

DEBIRI-TACE
- Improved disease control and survival in chemotherapy-refractory CRLM
- Stronger benefit when combined with systemic agents

TARE
- Favorable tolerability and lower toxicity profile, especially in bilobar disease
- No survival benefit observed in first-line settings

DEBIRI-TACE & TARE
- Both therapies offer locoregional control
- Each has distinct advantages depending on disease burden, prior treatments, and patient tolerance

FEATURE	DEBIRI-TACE	TARE
Tumor Response	Higher	Moderate
Survival	Improved (especially with systemic agents)	No proven first-line benefit
Tolerability	Moderate	Favorable
Best Use	Refractory disease	Bilobar disease/systemic-intolerant

Table 1. DEBIRI-TACE and TARE Summary Comparison Chart.

Discussion

- **Therapeutic differentiation is key:** While both DEBIRI-TACE and TARE offer locoregional control, their clinical utility varies based on patient and disease characteristics [1,4]
- **Evidence supports integration:** DEBIRI-TACE may be more suitable for patients with chemotherapy-refractory disease, especially when systemic therapy is feasible [1,8]
- **TARE's role remains nuanced**: Despite favorable tolerability, its lack of survival benefit in first-line trials limits its use to salvage or consolidation settings
- **Synergy with systemic therapy:** These findings align with earlier studies supporting the synergy of locoregional and systemic therapy [9]
- **Limitations in current data:** Heterogeneity in trial design, patient selection, and endpoints complicates direct comparison and generalizability
- **Need for personalized approaches:** Treatment selection should be individualized, considering disease distribution, prior therapy, and patient tolerance

Conclusion

- Both therapies are viable options for unresectable, liver-dominant CRLM
- DEBIRI-TACE offers stronger disease control in select patients
- TARE is better tolerated and may be an alternative for bilobar disease or patients with limited systemic therapy options
- Multidisciplinary evaluation is critical for individualized therapy

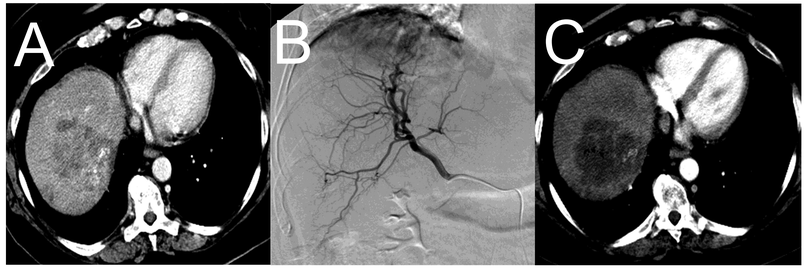

Figure 2. Pre- (A), Intra- (B), and Post- (C) Chemoembolization CT with DEBIRI-TACE in Colorectal Liver Metastases (*Narayanan et al.*).

Future Directions

- Ongoing trials are investigating DEBIRI/TARE combinations with immunotherapy and targeted agents to enhance outcomes
- Further research is needed to define optimal sequencing, patient selection, and biomarker-driven strategies

References

Scan to view references!