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Interventional Oncology & Y-90 Radioembolization

## MODERN INTERVENTIONAL ONCOLOGY DATA

BCLC 2025 Concepts, Y-90 vs TACE, and Contemporary Locoregional Therapy

Modern hepatocellular carcinoma (HCC) management continues to evolve toward increasingly personalized multidisciplinary decision-making. Recent BCLC updates emphasize structured clinical decision frameworks, individualized therapy selection, and expanding integration of locoregional therapies including ablation, TACE, and transarterial radioembolization (TARE/Y-90).

### BCLC 2025 Themes

- Greater personalization of treatment selection within multidisciplinary tumor boards.
- Expanded discussion of TARE/Y-90 as part of modern locoregional therapy algorithms.
- Increased recognition of ablative-dose radioembolization strategies in selected patients.
- Continued evolution toward integrating catheter-based therapies with systemic immunotherapy.
- Structured evaluation of clinical complexity, liver reserve, performance status, and patient-centered goals.

### Y-90 vs TACE: General Clinical Considerations

Clinical Topic	Y-90 / TARE	TACE
Treatment Mechanism	Internal radiation delivery via microspheres	Arterial chemotherapy with embolization
Typical Sessions	Often fewer treatment sessions	May require repeated treatments
Portal Vein Thrombus	Often considered favorable in selected cases	Can be limited in portal vein compromise
Post-Procedure Syndrome	Often milder fatigue/nausea profile	Post-embolization syndrome more common

Clinical Topic	Y-90 / TARE	TACE
Goal of Therapy	Bridge, downstage, radiation segmentectomy, palliation	Disease control and progression delay

## LEGACY Study

<b>Key Findings</b>	High objective response rates and durable local control using ablative-dose Y-90.
<b>Clinical Relevance</b>	Frequently referenced in discussions regarding radiation segmentectomy and transplant bridging.

## DOSISPHERE-01

<b>Key Findings</b>	Personalized dosimetry improved objective response and survival outcomes.
<b>Clinical Relevance</b>	Major modern trial supporting individualized Y-90 treatment planning.

## TRACE Trial

<b>Key Findings</b>	Demonstrated favorable progression metrics when comparing Y-90 and TACE strategies.
<b>Clinical Relevance</b>	Commonly discussed in multidisciplinary liver oncology decision-making.

## SARAH & SIRveNIB

<b>Key Findings</b>	Compared Y-90 with systemic therapy in advanced HCC.
<b>Clinical Relevance</b>	Important landmark trials shaping discussions regarding locoregional versus systemic treatment.

### Modern Tumor Board Perspective

Increasingly, liver cancer treatment decisions involve dynamic selection between ablation, resection, transplantation, TACE, TARE/Y-90, SBRT, and systemic immunotherapy. Modern BCLC frameworks increasingly recognize that individualized multidisciplinary decision-making may extend beyond rigid stage-based treatment allocation.

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*Selected concepts adapted from contemporary BCLC updates, interventional oncology literature, and major Y-90 clinical trials including LEGACY, DOSISPHERE-01, SARAH, SIRveNIB, and TRACE.*