

Evaluating Liver Function Status Trends in Hepatocellular Carcinoma Patients with Intermediate Stage Disease Undergoing Radioembolization: A Longitudinal Study

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Background/Aim

- Hepatocellular carcinoma (HCC) patients with intermediate stage disease (BCLC B) are allocated liver-directed therapy (LDT), but there is increasing application of systemic therapies in this space.
- There is a concern that LDTs negatively impact liver function and prevent patients from receiving potential benefit of systemic therapies when they advance.
- Here, we aim to assess liver function trends in BCLC B patients undergoing radioembolization (Y90).

Methods

- With IRB approval, BCLC B/Child-Pugh (CP) A patients treated with Y90 between 2004-2017 who had follow-up at least 1-month post Y90 were included.
- CP status was assessed at baseline, 1-month post Y90 and every 3-months thereafter.
- Endpoints of the study included time to development of initial CP B status, time to persistent CP B status (CP B status at two consequent follow-up visits), time to CP C and overall survival (OS).
- Time to endpoint analyses were done using Kaplan-Meier method.

Results

- 74 patients (80% males, mean age 63 (30-86) years) with mostly (62%) bilobar disease and median index tumor size 4.7 cm (range[r]: 1.2 – 17.8) met inclusion criteria. They underwent 186 Y90 treatments (median 2 (range[r]: 1-8)). Median time to 2nd Y90 was 2.3 months (r: 1.7-6.4), and median time to 3rd and 4th Y90 was 11.7 (r: 7.5 – 15) and 17.3 (r: 11.5-23.1) months, respectively.
- 49 (66%) patients developed CP B at median time to 1st development of CP B at 10.47 (CI: 6.4 – 16.3) months post Y90, of whom 16 (21%) patients had only temporary fluctuations to CP B status. Eventually, 43 (58%) developed persistent CP B at median time to persistent CP B of 15.4 Months (CI: 9.2 – 25.3) months.
- 17 (23%) became CP C at a median time to development of CP C 87.2 (CI: 39.8 – 136.1) months. 20 patients had systemic therapies after Y90.
- Univariate and multivariate analyses showed that baseline albumin and bilirubin levels significantly impacted time to progression to CP B status, time to persistent CP B status, and time to CP C status.
- Median OS censored to liver transplant was 30.4 (CI: 22.7-37.4) months.

Conclusion

- Y90 outcomes for BCLC B, CP A patients are favorable. Hepatic function was maintained for a period of time that would allow subsequent systemic therapies. Despite multiple Y90 sessions, only baseline liver function, as assessed by serum albumin and bilirubin, were associated with progression of CP status for CP A/BCLC B patients receiving Y90.

Clinical and Lab Criteria	Points		
	1	2	3
Bilirubin (mg/dL)	<2	2-3	>3
Albumin (g/dL)	>3.5	2.8-3.5	<2.8
International Normalized Ratio (INR)	<1.7	1.7-2.3	>2.3
Encephalopathy	None	Mild to Moderate (grade 1-2)	Severe (grade 3-4)
Ascites	None	Mild to Moderate (responsive to diuretic)	Severe (refractory to diuretic)

Total Points

Child-Pugh Class A= 5-6 points (least severe liver disease)

Child-Pugh Class B= 7-9 points (moderately severe liver disease)

Child-Pugh Class C= 10-15 points (most severe liver disease)

