Symposium I

Global Discrepancy in Surgical Indication: Multiple or Bilobar HCCs

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Liver resection is consided the mainstay of treatment for hepatocellular carcinoma in patients with well-preserved liver function. With advances in surgical techniques and perioperative care, liver resection for hepatocellular carcinoma can be performed with low hospital mortality rate, even patients with chronic liver disease.

According to a recent HCC staging system from the Barcelona Clinic Liver Cancer Group (BCLC), curative hepatic resection is indicated only in patients with single HCC with satisfactory liver function. However, the role of surgical resection for multiple or bilobar HCC (BCLC intermediate-stage HCC) is less well-defined.

According to the BCLC staging system, for the patients presenting with multinodular HCC and relatively preserved liver function, absence of cancer-related symptoms, and no evidence of vascular invasion or extrahepatic spread-i.e., those classify as intermediate-stage. For thest patients of intermediate stage, TACE is the current standard of care. However, surgical resection is still possible for patients with multiple HCCs. Several authors, on the basis of results from their individual centers, have advocated hepatic resection.

This brief report summarizes the review of outcomes after liver resection and the role of surgical resection for patients with multiple HCCs.

Table 1. Randomized controlled trials on TACE for hepatocellular carcinoma

Reference	N	Treatment	Survival rate (%)		p-value
			1	2	
Lin et al., 1988	56	TAE	42	25	NS
		TAE+IV 5-FU	20	20	
		IV 5-FU	13	13	
Pelletier et al., 1990	57	TACE	24	-	NS
		Conservative	33	-	
GETCH* et al., 1995	58	TACE	62	38	NS
		Conservative	43	26	
Bruix et al., 1998	59	TAE	70	49	NS
		Conservative	72	50	
Pelletier et al., 1998	60	TACE+tamoxifen	51	24	NS
		Tamoxifen	55	26	
Lo et al., 2002	61	TACE	57	31	0.002
		Conservative	32	11	
Llovet et al., 2002	62	TACE	82	63	0.009
		TAE	75	50	
		Conservative	63	27	

*Group d'Etude et de Traitement du Carcinome hepatocellularie.

Table 2. Report of the 17th nationwide follow-up survey of primary liver cancer in japan

Cumulative survival rates(%)		Year			
Treatment	Tumor No.	1	3	5	10
Hepatic resection	1	90.8	74.4	59.2	32
	2	86.1	64.1	46.4	19.9
	≥3	75.1	47.5	30.0	12.6
Local ablation therapy	1	93.7	70.9	48.4	17.7
	2	92.0	63.8	37.3	10.1
	3	90.6	59.0	31.7	7.0
	4	87.9	51.7	27.3	4.8
	≥5	82.9	42.3	21.1	5.2
TAE	1	82.9	52.7	29.7	6.9
	2	81.6	44.9	23.0	3.7
	3	79.3	37.6	19.0	2.2
	4	81.1	36.8	19.0	4.6
	≥5	62.3	25.0	11.9	1.5

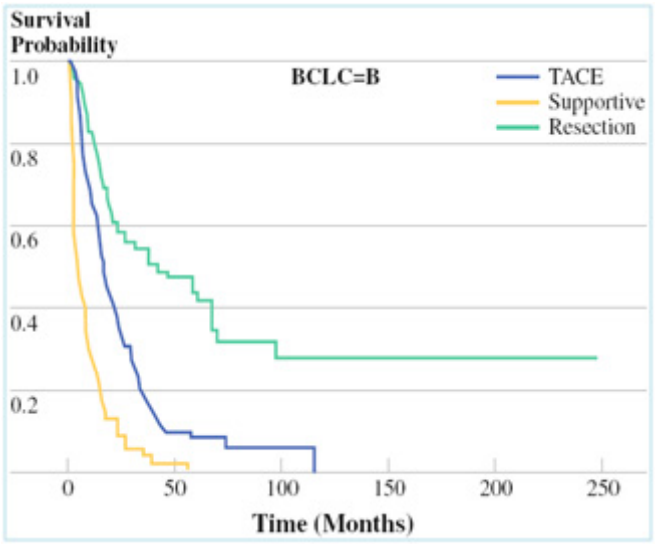

Fig. 1. Survival curves of multiple HCC patients stratified to treatment modalities in BCLC stage B.

The survival benefit of TACE or TAE has been the subject of a few RCTs, that provide contradictory results. However, a cumulative meta-analysis of these studies has clearly shown that 2-year survival of patients with HCC not suitable for radical therapies who are treated with TACE or TAE. TACE provided a short-term (2-year) survival benefit compared with control but Whether TACE can provide a long-term survival benefit remains unclear. Compared with several results in the literature, surgical resection can achieve better short-term and logn-term survival results in the patients with multiple HCCs (intermediate-stage HCC).

In the literature review of outcomes after resection, patients with multiple HCCs can tolerate hepatic resection without differences in morbidity and mortality compared to patients with single HCC. And, these patients were obtained survival benefit. For these patients, 5-year overall survival rate was 26～72% (mean: 41%).

Survival results in the patients with multiple HCCs are less favorable compare to patients with single tumor. However, Fong et al., Poon et al. and Ishizawa et al. reported satisfactory results (48%, 60%, and 58% respectively) and presented several predictive factors.

Conclusion

Liver resection can be safely preformed in patients with multinodular HCCs. Although the survival results are less favorable in patients with multiple HCCs, liver resection in a selected group can provide more favorable compare to non-surgical treatments. Especially, liver resection can provide a survival benefit for patients with multiple HCCs associated with Child-Pugh class A cirrhosis. Survival after primary surgery was poor in patients with child-Pugh class B cirrhosis who had multiple HCCs. Thus, patients with multiple HCCs and Child-Pugh class B cirrhosis are not good candidates for liver resection and we need to be further evaluate the cliniopathological factors to identify independent predictors of survival that may help to select a subgroup of patients with multiple HCCs who will benefit most from aggressive surgical resection.

References

1. Ishizawa T, Hasegawa K, Aoki T, Takahashi M, et al. Neither multiple tumors nor portal hypertension are surgical contraindications for hepatocellular carcinoma. Gastroenterology 2008;134:1908-1916.
2. Guido Torzilli, Matteo Donadon, Matteo Marconi, et al. Hepatectomy for stage B and C hepatocellular carcinoma in the Barcelona clinic liver cancer classification. Arch surg 2008;143:1082-1090.
3. Being-Whey Wang, King-Tong Mok, Shiuh-inn Liu, et al. Is hepatectomy beneficial in the treatment of multinodular hepatocellular carcinoma? J Formos Med Assoc. 2008;107:616-626.
4. Ming-Chih Ho, Guan-Tarn Huang, Yuk-Ming Tasang, et al. Liver resection improveds the survival of patients with multiple hepatocellular carcinomas. Ann Surg Oncol 2009;16:848-855.
5. Kelvin K. Ng, Jean-Nicolas Vauthey, Timothy M. Pawlik, et al. Is hepatectomy for large or multinodular hepatocellular carcinoma justified? Results from a multi-institutional database. Annals of Surgical Oncology 2005;12:1-10.
6. Andrea Ruzzenente, Franco Capra, Silva Pachera, et al. Is liver resection justified in advanced hepatocellular carcinoma? Results of an observational study in 464 patients. J Gastroinstest Surg 2009;13:1313-1320.
7. Riccardo Lencioni. Loco-regional treatment of hepatocellular carcinoma. Hepatology 2010;52:762-773.
8. Iwao Ikai, Shigeki Arii, Masatoshi Okazaki, et al. Hepatology Research 2007;37:676-691.