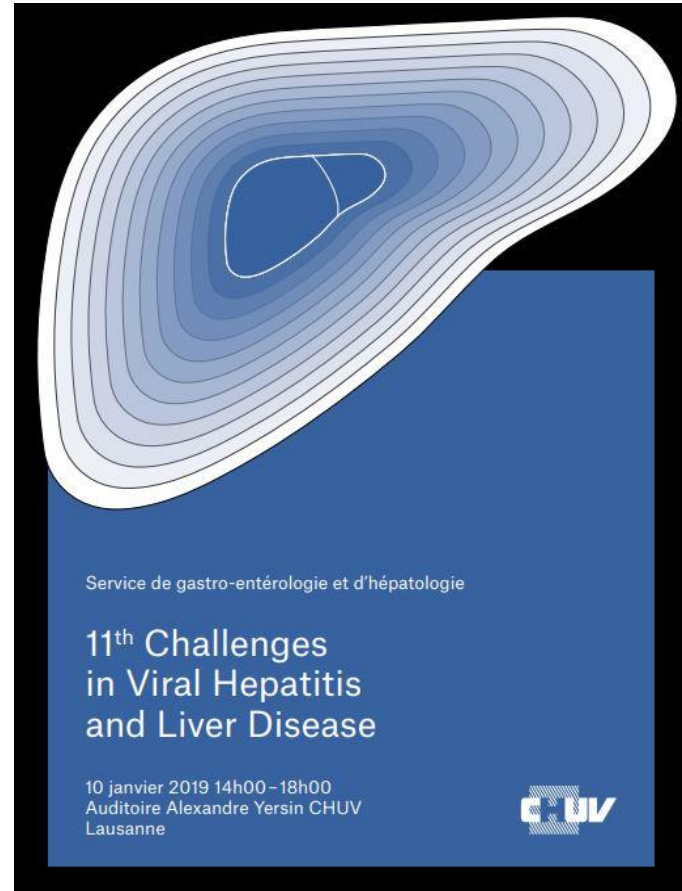


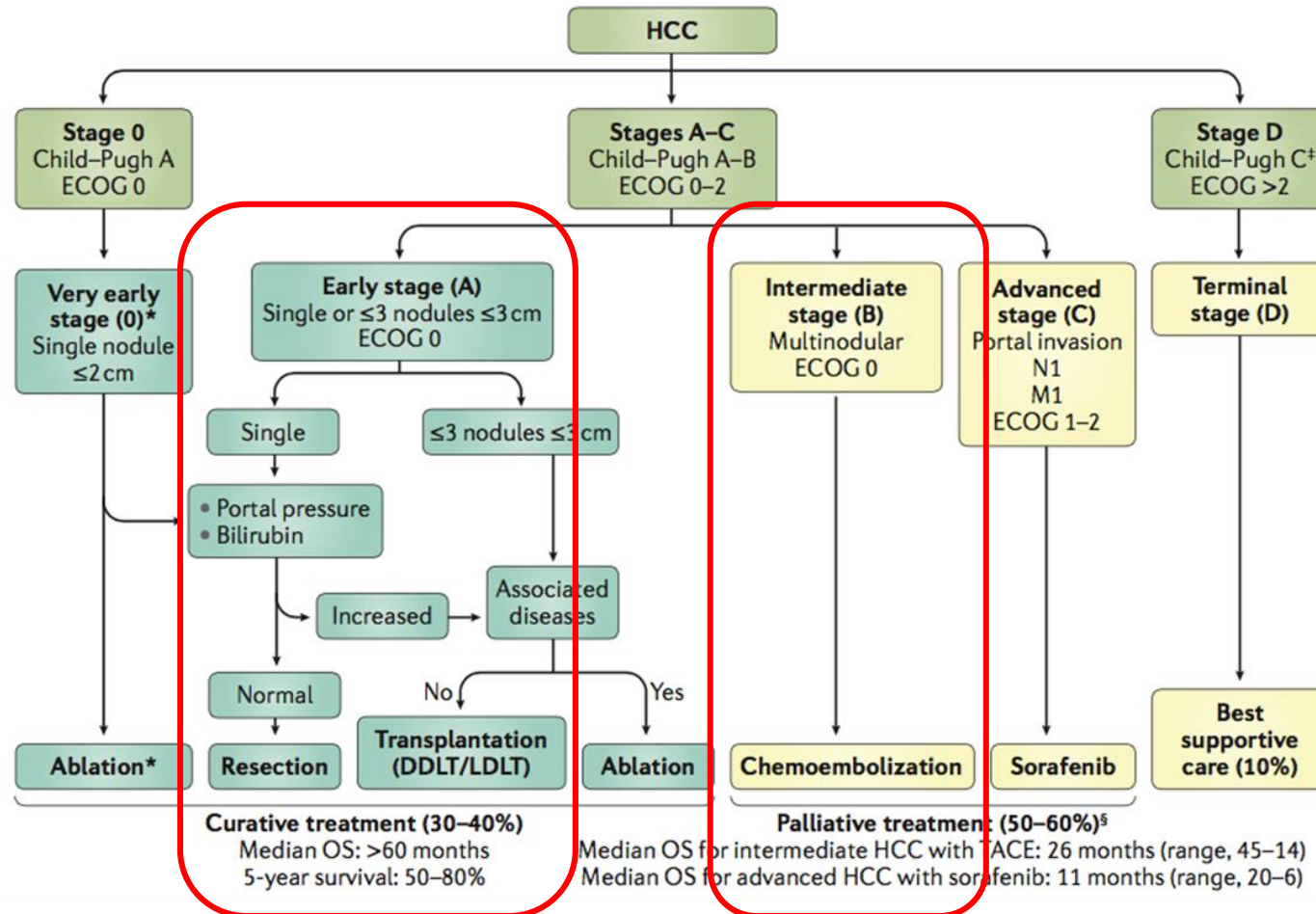
Surgery in Intermediate stage HCC: Where do we stand?



PD Dr. Emmanuel Melloul, FEBS (HPB)
Department of Visceral Surgery
University Hospital CHUV, Lausanne, Switzerland

Background

Algorithm of Barcelona Clinic Liver Cancer (BCLC)



Surgery

TACE

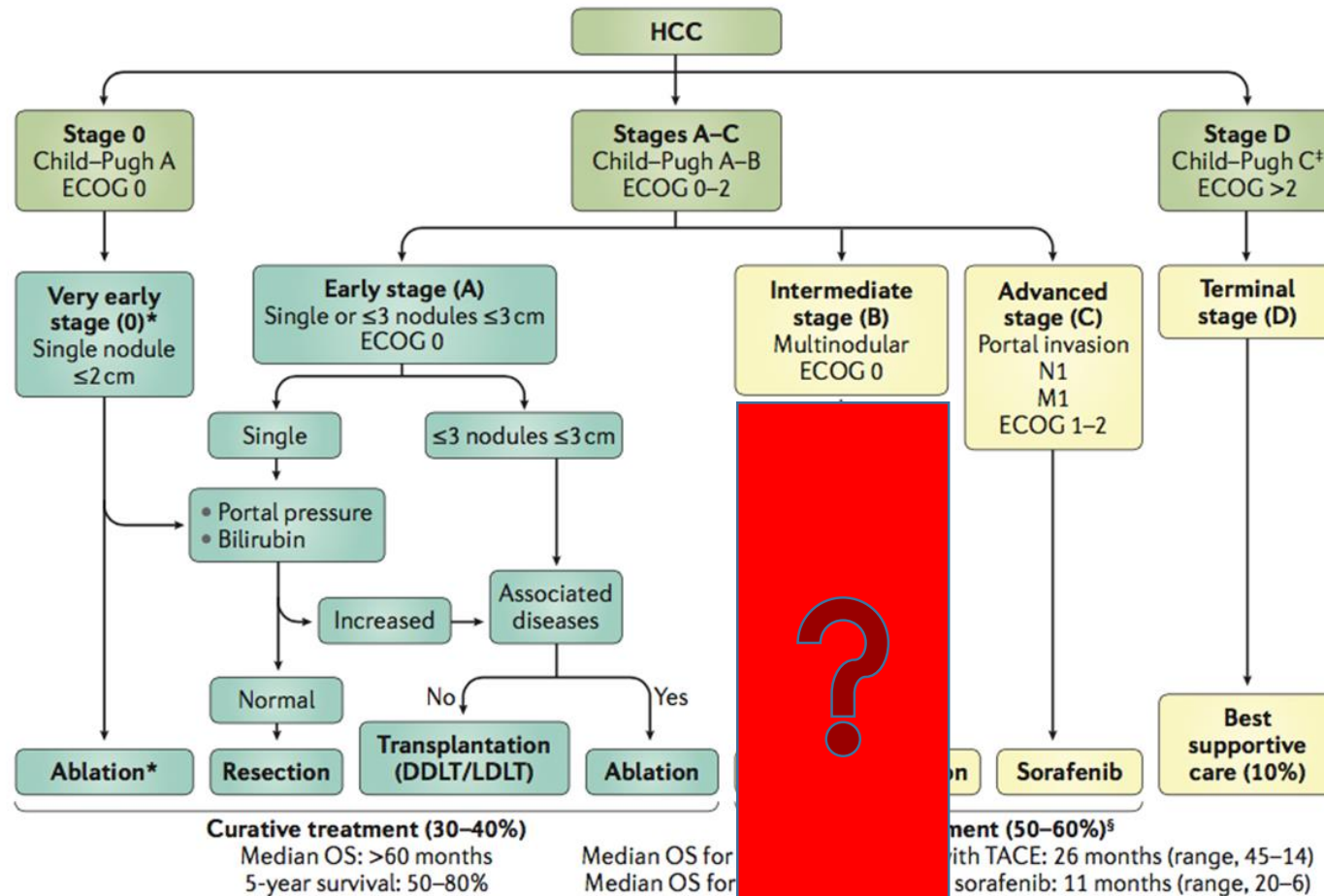
Llovet JM et al. *Nat Rev Dis Prim* 2016

Median OS: >60 months

Median OS: 26 months

Background

Any Benefit of Surgery in BCLC stage B HCC?



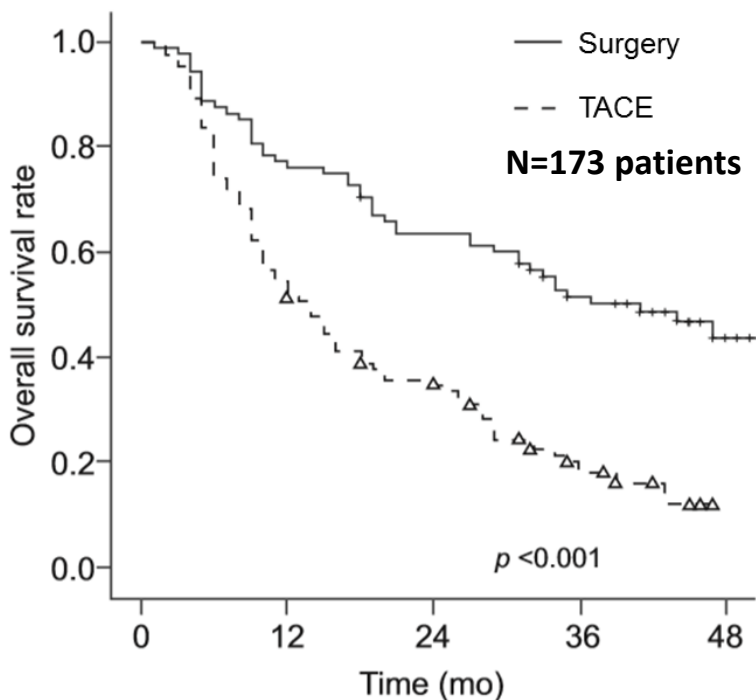
Llovet JM et al. Nat Rev Dis Prim 2016



Partial hepatectomy vs. transcatheter arterial chemoembolization for resectable multiple hepatocellular carcinoma beyond Milan criteria: A RCT

Lei Yin¹, Hui Li^{2,†}, Ai-Jun Li^{1,†}, Wan Yee Lau^{1,3}, Ze-ya Pan¹, Eric C.H. Lai^{1,3}, Meng-chao Wu¹, Wei-Ping Zhou^{1,*}

¹The Third Department of Hepatic Surgery, Eastern Hepatobiliary Surgery Hospital, Second Military Medical University, Shanghai 200438, China; ²The Department of Dermatology, Changhai Hospital, Second Military Medical University, Shanghai 200438, China; ³Faculty of Medicine, The Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, Hong Kong Special Administrative Region



	PH	TACE
Biggest tumor diameter (cm) (mean ± sd)	7.3 ± 2.5	7.4 ± 2.3
Total tumor diameter (cm) (mean ± sd)	9.5 ± 3.0	10.4 ± 3.3
Number of tumor ^{††}		
2	55	48
3	22	29
4	9	6
5	2	2

Yin L et al. *J Hepatol* 2014

Hepatic Resection Compared to Chemoembolization in Intermediate-to Advanced-Stage Hepatocellular Carcinoma: A Meta-Analysis of High-Quality Studies

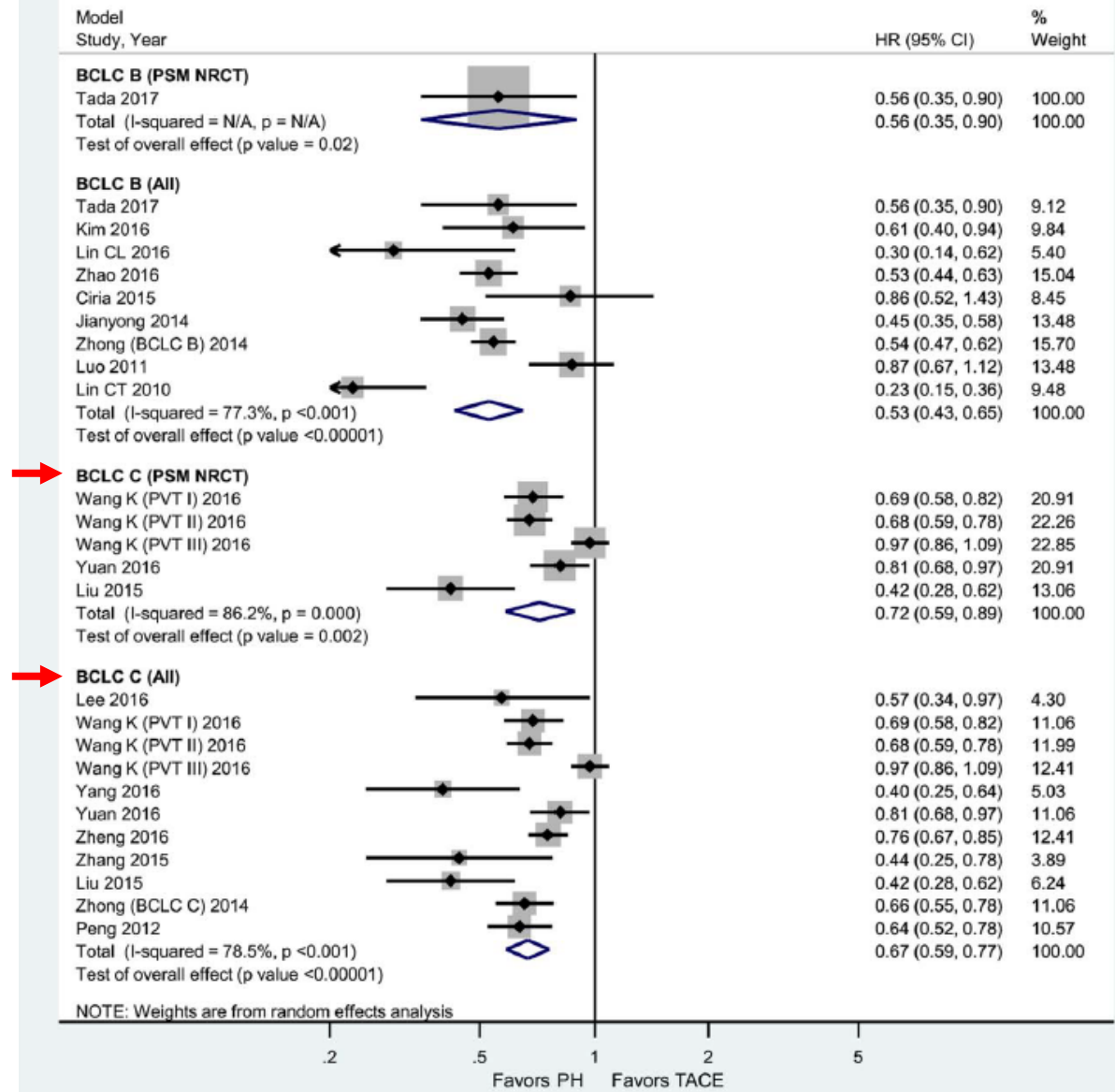
Myung Han Hyun^{1*}, Young-Sun Lee^{2*}, Ji Hoon Kim,² Chan Uk Lee,² Young Kul Jung,² Yeon Seok Seo,²

Hyung Joon Yim,² Jong Eun Yeon,² and Kwan Soo Byun²

18 studies included

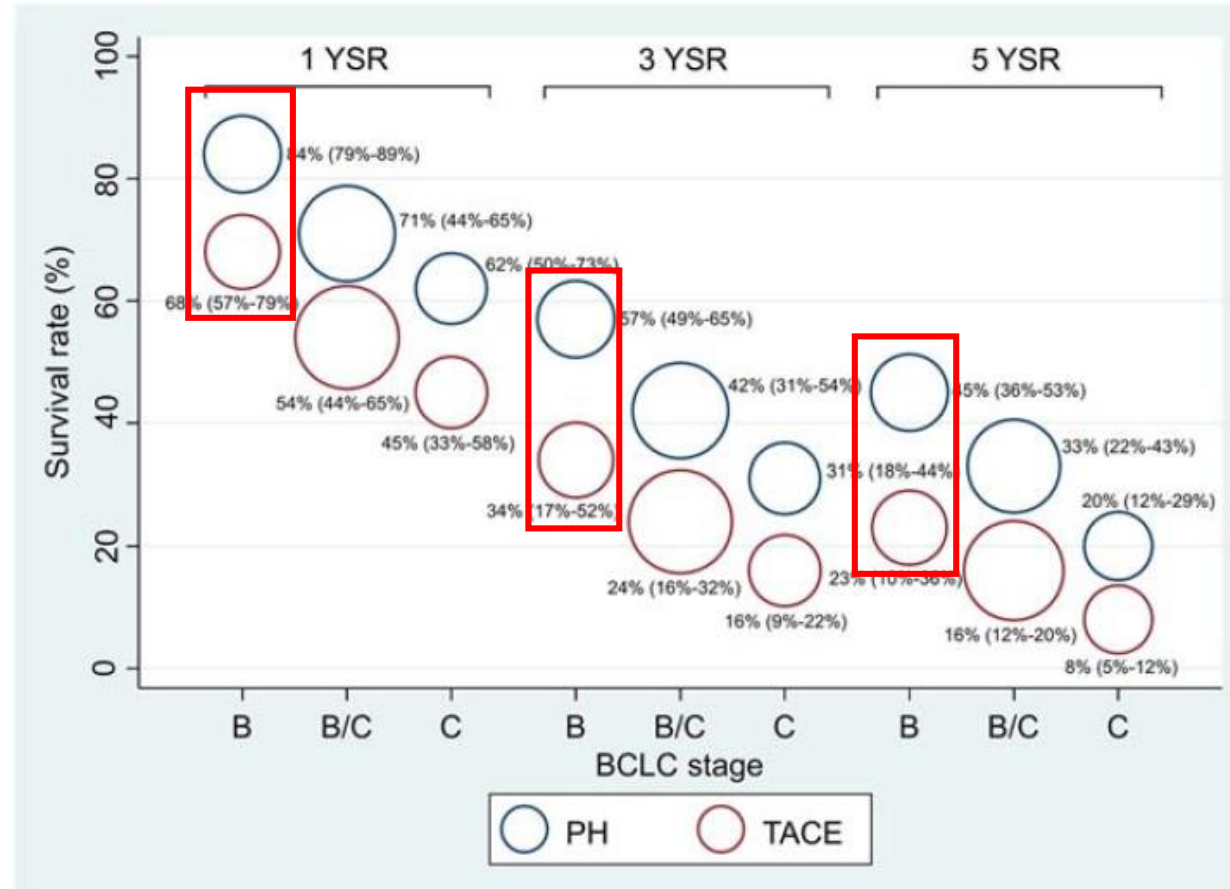
- 1 RCT
- 5 prop score matching studies
- 12 Non-RCTs
- 5986 patients

Overall survival



1-, 3-, and 5 years survival


Partial hepatectomy vs. TACE



Median survival at 5 years in BCLC B:
45% after Partial Hepatectomy
23% after TACE

Critical assessment of Hyun et al. metaanalysis

HEPATOLOGY

Correspondence |  Full Access

Surgical Resection vs. Transarterial Chemoembolization for Intermediate Stage Hepatocellular Carcinoma (BCLC-B): An Unsolved Question

Ismail Labgaa, Nicolas Demartines, Emmanuel Melloul

First published: 01 November 2018 | <https://doi.org/10.1002/hep.30338>

- One study included patients with sequential treatments (SR and TACE)
- 4/9 analyzed studies included patients with single large HCC (>5 cm)

Hypothesis and Aim

Hypothesis

BCLC algorithm may be too restrictive, leading to the exclusion of patients with intermediate HCC (BCLC-B) who would benefit from surgery.

Aim

To analyze long-term outcomes of liver resection (LR) compared to transarterial chemoembolization (TACE) in patients with intermediate stage HCC (BCLC-B).

METHOD

Systematic review of the literature according to PRISMA guidelines.

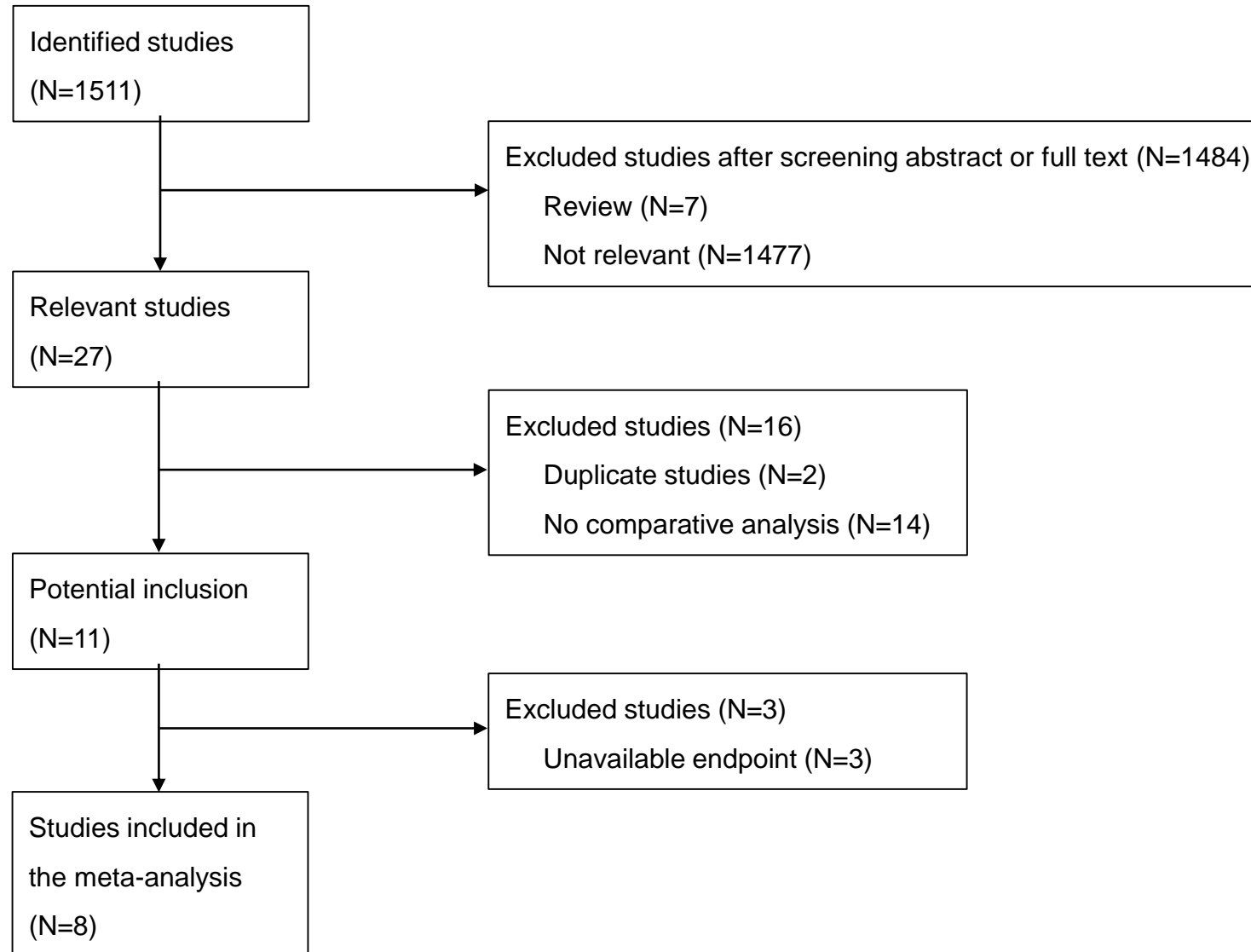
Inclusion criteria:

- Only trials comparing Liver Resection with TACE
- Patients with HCC of stage B (BCLC-B)

Primary outcome = overall survival (OS)

Secondary outcome = treatment-related mortality

PRISMA FLOWCHART



RESULTS

Authors	Year	Design	LR	TACE	Country
Lin et al.	2010	Retrospective series	93	78	Taiwan
Zhong et al.	2013	Retrospective series	257	135	China
Jianyong et al.	2014	Retrospective series	433	490	China
Yin et al.	2014	RCT	88	85	China
Ciria et al.	2015	Retrospective series	36	44	Spain
Kim et al.	2016	Retrospective series	52	225	Korea
Zhao et al.	2016	Retrospective series	274	169	China
Tada et al.	2017	Retrospective series, propensity Score Analysis	132	132	Japan

Total

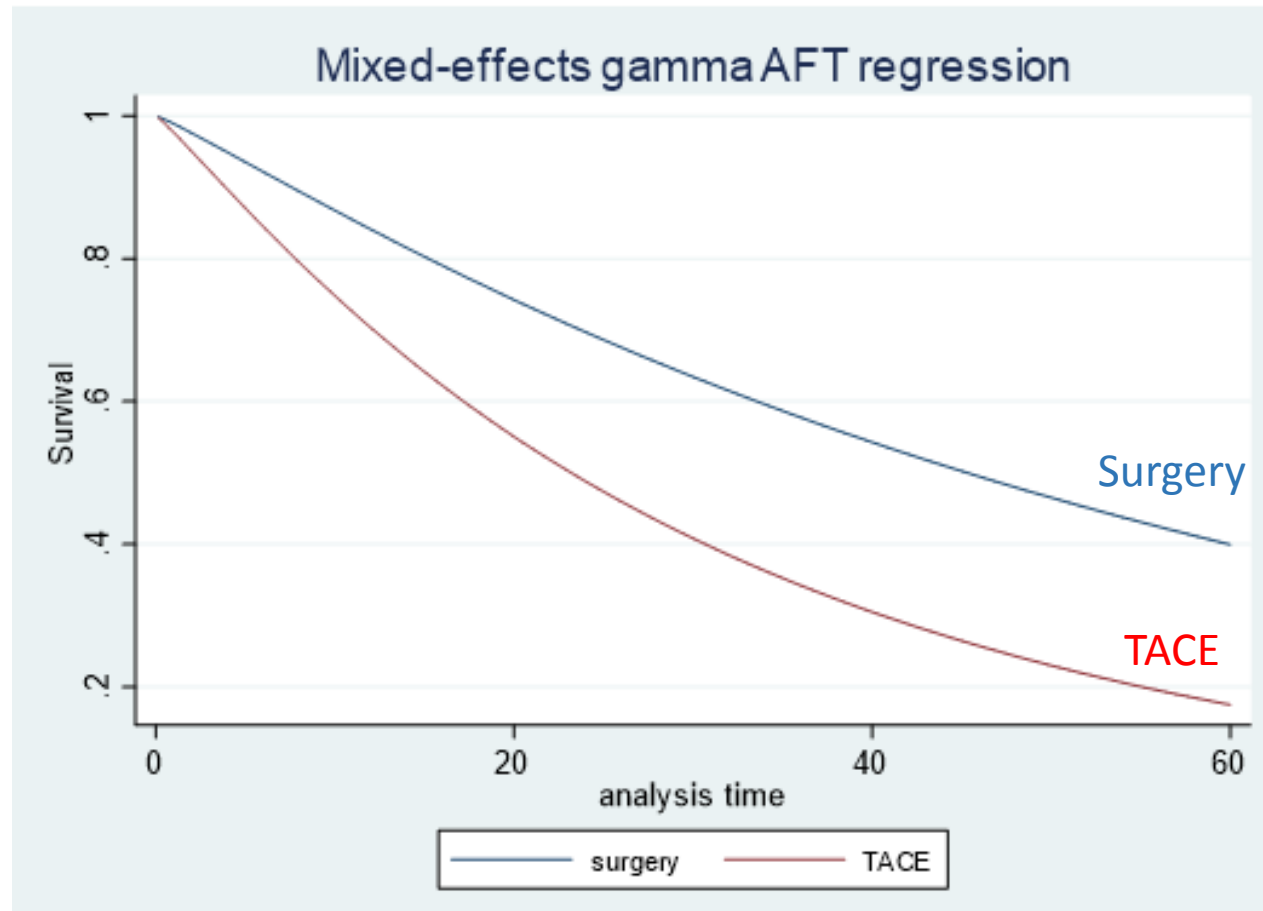
8 trials

1365

1358

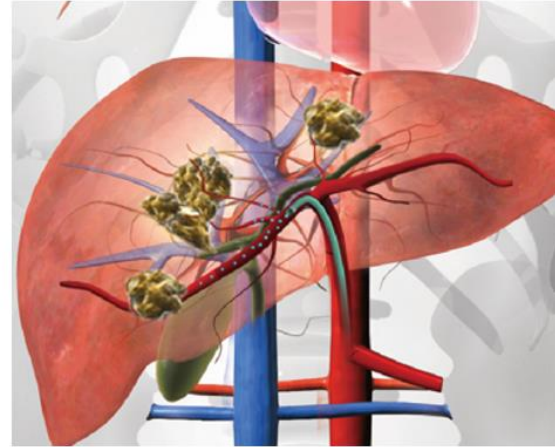
2723

RESULTS



Other alternatives to TACE?

Y90 as a «bridge» to liver surgery



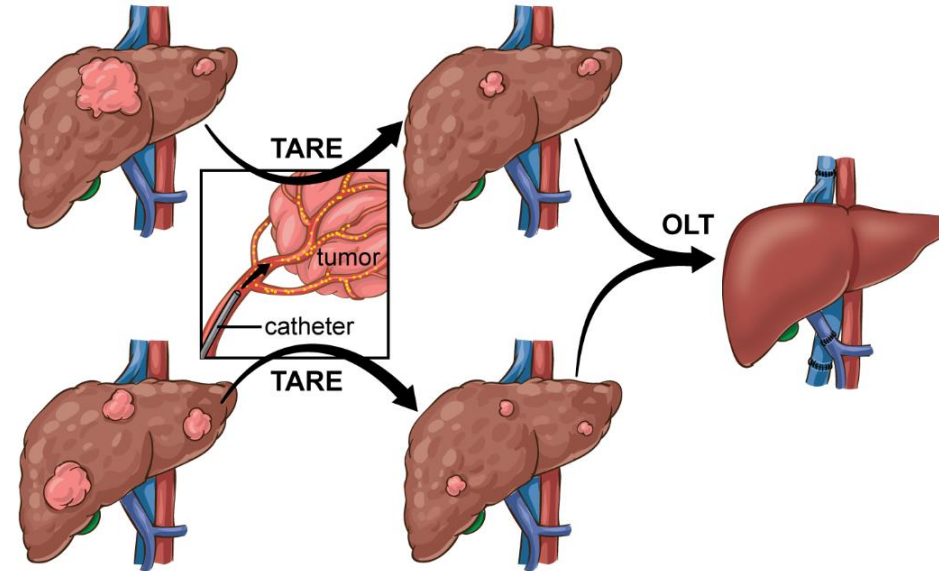
- Controlling the liver tumor.
- Limiting tumor progression in the tumor-naïve (and untreated) lobe.

- Induce volumetric changes in liver lobes

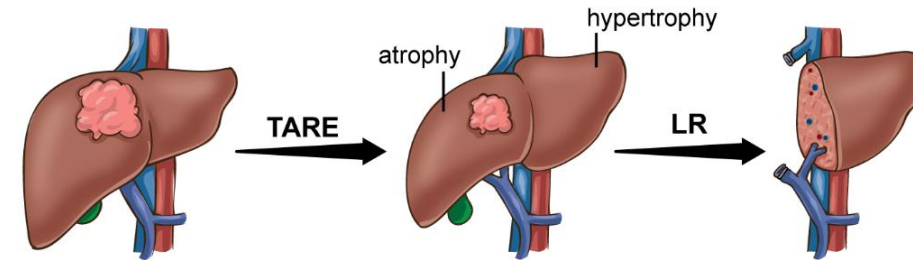
Y90 as a bridge to surgery

Proof-of-concept

Bridge to Transplant



Bridge to Resection



J Gregory ©2018 Mount Sinai Health System

METHOD

Patients: Patients undergoing exclusively Y90 followed by either OLT or LR.

Center: Mount Sinai, New York, USA

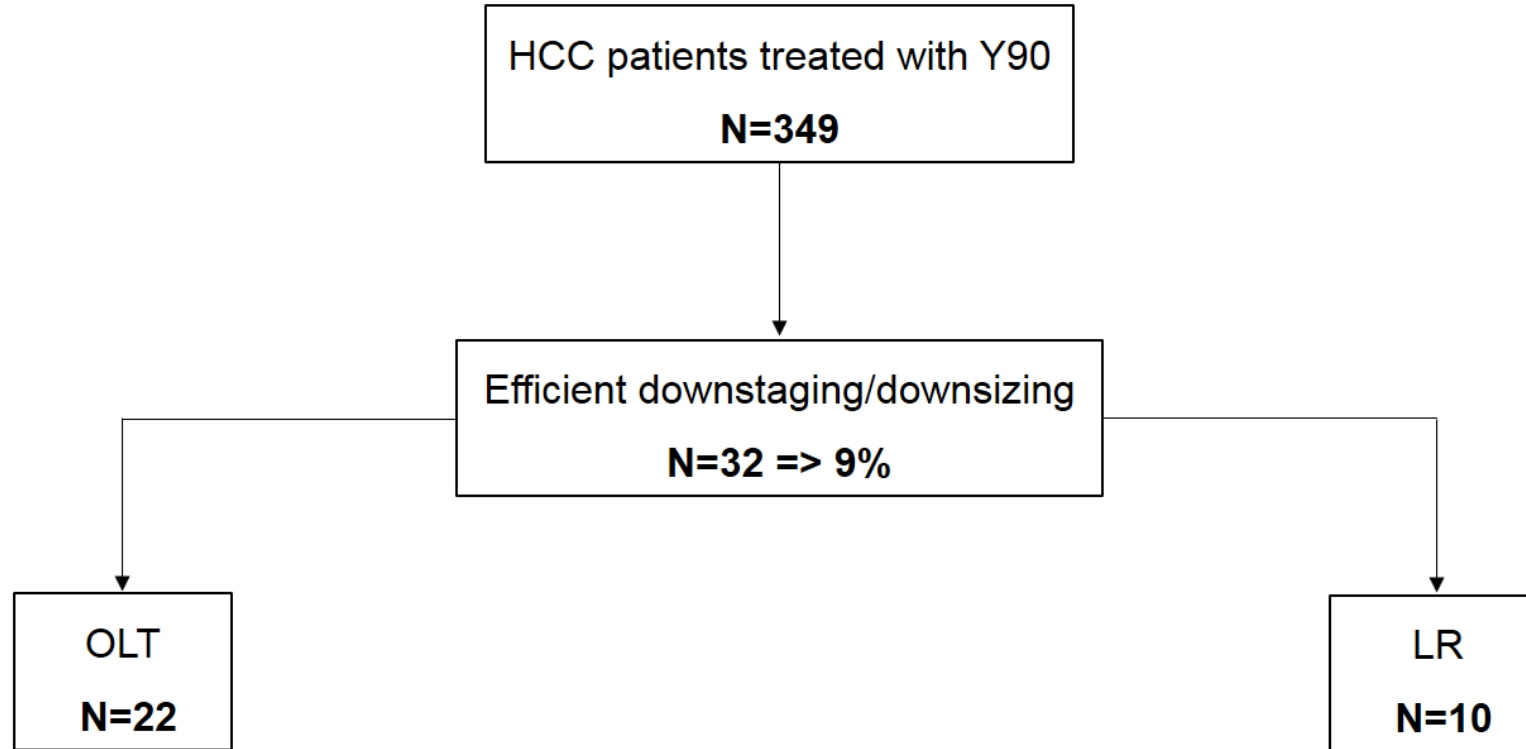
Period: 2012-2016

Primary outcome: Postoperative morbidity and mortality (Clavien classification)

Secondary outcome: Overall survival (OS) and response to Y90 (mRECIST and pathology)

Results

Flowchart



Results

Demographic data

		OLT (n=22)	LR (n=10)	Total (n=32)
Age ≥ 60 years		13 (59)	5 (50)	18 (56)
Gender (male)		15 (68)	7 (70)	22 (69)
BMI (kg/m ²)		27.6 (25-30.8)	24.9 (22.1-28.4)	26.6 (24.4-30.5)
Cirrhosis		21 (96)	6 (60)	27 (84)
	Child-Pugh A	1 (5)	9 (90)	10 (32)
	Child-Pugh B	8 (36)	0	8 (26)
	Child-Pugh C	13 (59)	0	13 (42)
	HBV	2 (9)	0	2 (6)
	HCV	14 (64)	7 (70)	21 (66)
Median MELD score		31 (25-33)	8 (7-10)	26 (10-33)
Underlying liver disease				
HIV		0	2 (20)	2 (6)
Portal hypertension		21 (96)	0	21 (66)
Multiple lesions		14 (64)	5 (50)	19 (59)
Bilobar disease		4 (18)	1 (10)	5 (16)
Median size of tumor (cm)		4.2 (2.6-5)	5.2 (2.6-11.5)	4.5 (2.7-5.7)
BCLC stage				
	Pre-surgery			
	BCLC A	22 (100)	6 (67)	28 (90)
	BCLC B	0	3 (33)	3 (10)

Results

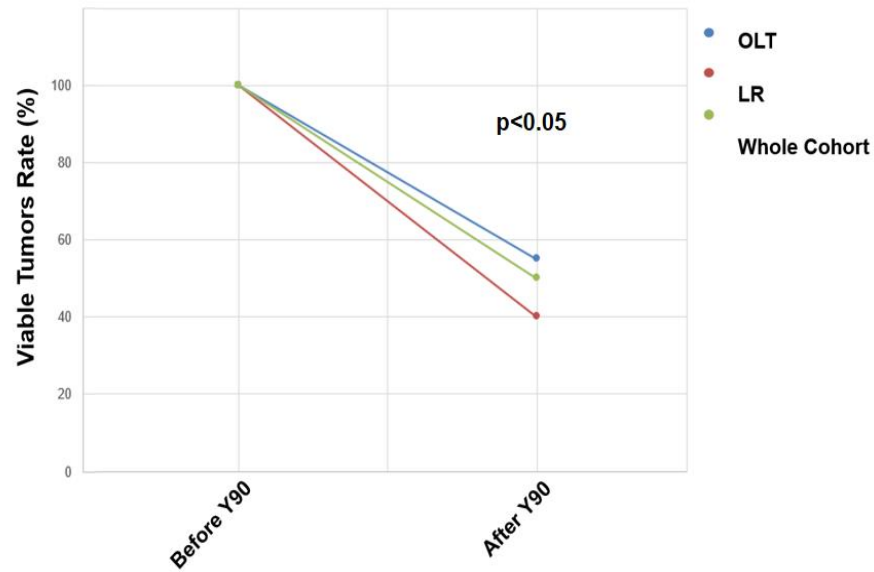
Short term outcomes

			OLT (n=22)	LR (n=10)	Total (n=32)
ISGLS					
	Liver failure		0	1 (10)	1 (3)
		Grade A	0	0	0
		Grade B	0	0	0
		Grade C	0	1 (10)	1 (3)
	Bile leak		1 (5)	0	1 (3)
		Grade A	0	0	0
		Grade B	1 (5)	0	1 (3)
		Grade C	0	0	0
Clavien					
	Minor (I-II)		20 (91)	4 (40)	24 (75)
	Major (III-IV)		4 (18)	1 (10)	5 (16)
	Mortality (V)		0	1 (10)	1 (3)
	Any complication		20 (91)	5 (50)	25 (78)
Biomarkers					
	AST peak		560 (53-1688)	246 (179-585)	345 (165-1420)
	ALT peak		415 (94-688)	213 (146-646)	288 (116-496)
	Creat peak		1.4 (1.05-1.73)	0.85 (0.58-1.23)	1.3 (0.8-1.6)
	Bili peak		3.05 (1.65-5.2)	1.9 (1.43-2.3)	2.3 (1.53-4.83)
	INR peak		1.55 (1.2-2.25)	1.15 (1.1-1.33)	1.35 (1.13-1.8)

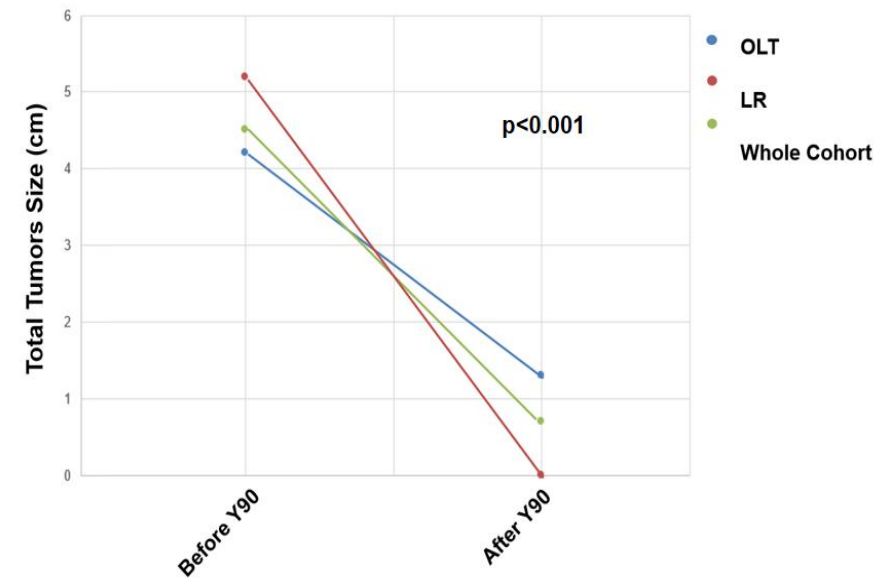
Results

Response to Y90 treatment

Number of viable tumors

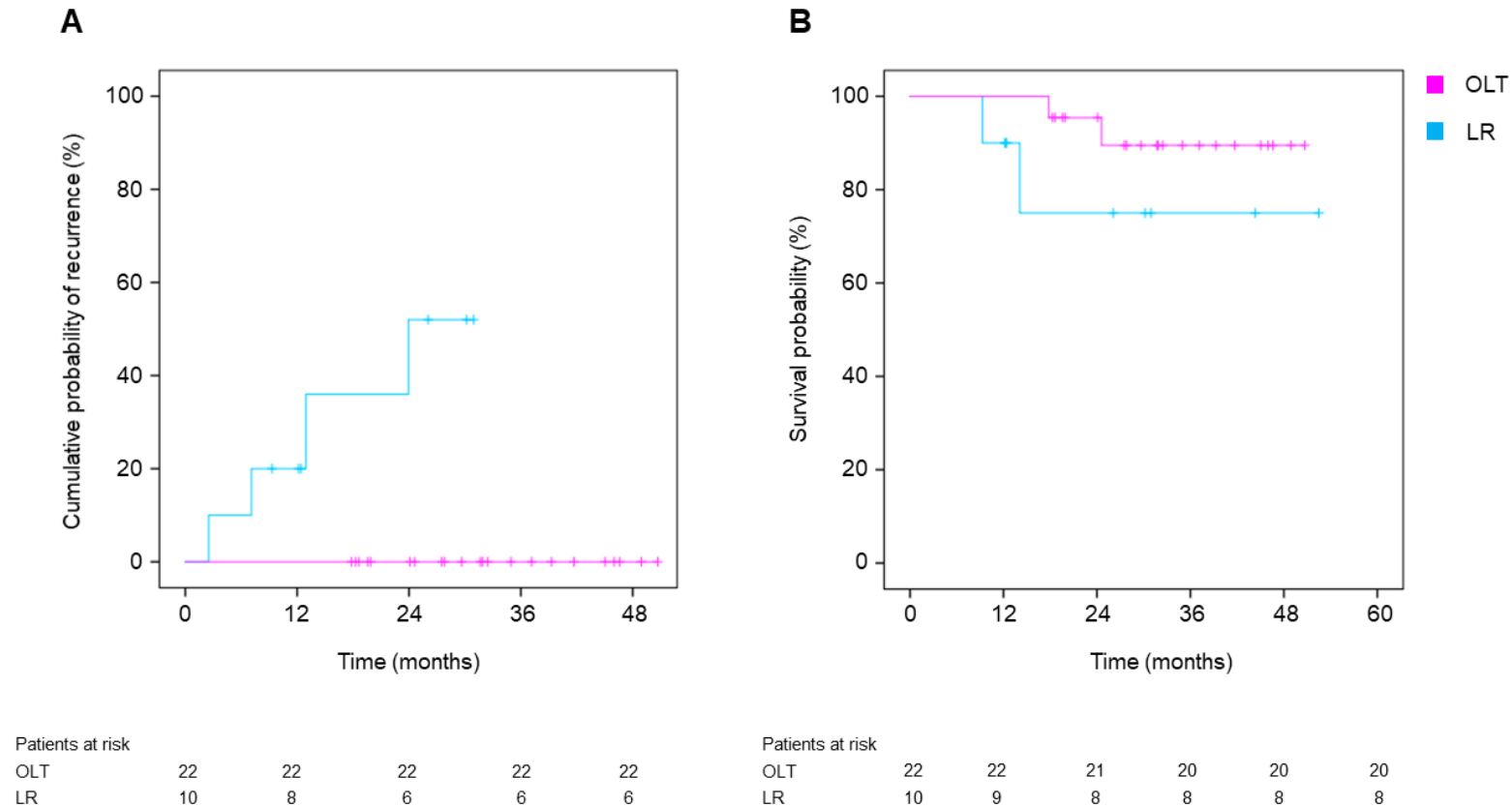


Tumors size



Results

Reccurence and Survival



Median time to recurrence 10 months

1-year survival rate = 97%

3-years survival rate = 86%

5-years survival rate = 86%

Conclusions

- Surgery for intermediate HCC (BCLC B) offers better long term survival compared to TACE with low procedure related mortality
- Liver surgery after TARE is safe and feasible
- In a subset of HCC patients, Y90 radioembolization may be use as a «bridge» to Liver resection or Liver transplantation
- There is a need to refine selection criteria for surgery of BCLC-B stage patients

Thank you for your attention!



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