

## Supplementary Online Content

Zhang Y, Zhang M, Chen M, et al. Association of Sustained Response Duration With Survival After Conventional Transarterial Chemoembolization in Patients With Hepatocellular Carcinoma. *JAMA Netw Open*. 2018;1(6):e183213. doi:10.1001/jamanetworkopen.2018.3213

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This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable 1.** AUROC for different time point of sustained response duration

	SRD				
	≥1 month	≥3 months	≥6 months	≥9 months	≥12 months
AUROC	0.665 (95% CI 0.640-0.690)	0.785 (95% CI 0.743-0.837)	0.913 (95% CI 0.888-0.938)	0.856 (95% CI 0.826-0.886)	0.844 (95% CI 0.803-0.885)

AUROC: time-dependent area under the receiver-operating characteristic curve;

SRD: sustained response duration.

**eTable 2.** Subgroup analysis for overall survival in primary cohort

	Median overall survival			<i>p</i> value
	SRD ≥6m	Initial responder	Best responder	
Tumor size ≤5cm	77.0	62.7	59.4	<0.001
Tumor size >5cm	64.8	53.2	51.5	<0.001
Tumor number ≤3	74.6	64.3	61.1	<0.001
Tumor number >3	66.2	54.1	52.5	<0.001
Capsule	78.4	65.4	61.2	<0.001
Non-capsule	62.5	51.2	49.5	<0.001

SRD sustained response duration.

**eTable 3. The initial and best response in detail.** After initial cTACE, CR was achieved in 382 of 2538 (14.8%) patients, PR in 492 (19.0%), and SD in 1129 (43.7%). PD was observed in 580 (22.5%) patients. After four times of cTACE, overall, the best response consisted of CR in 742 (28.7%) patients, PR in 300 (11.6%), and SD in 684 (26.5%). Thus the number of patients with objective response (CR+PR) increased from 874 (33.8%) to 1042 (40.3%) after repeated TACE sessions.

		<b>Best response</b>			
		CR	PR	SD	PD
<b>Initial response</b>	CR	382	0	0	0
	PR	174	78	0	0
	SD	103	110	470	0
	PD	83	112	201	184

**eTable 4.** Clinical factors associated with sustain response duration  $\geq 6$  months after the first TACE

Variables	Univariate analysis	Multivariate analysis	
	<i>p</i> value	<i>p</i> value	OR (95% CI)
Age( $\leq 60 / > 60$ y)	0.18		
Gender(Male/Female)	0.16		
HBV(yes/no)	0.40		
HCV(yes/no)	0.15		
AFP( $\leq 400 / > 400$ ng/ml)	0.16		
CA199( $\leq 37 / > 37$ U/ml)	0.13		
GGT( $\leq 37 / > 37$ u/L),	0.17		
ALP( $\leq 110 / > 110$ U/L)	0.17		
AST( $\leq 40 / > 40$ u/L)	<0.001		
ALT( $\leq 40 / > 40$ u/L)	0.17		
ALB( $\leq 35 / > 35$ g/L)	0.32		
TBIL( $\leq 20.5 / > 20.5$ umol/L)	0.23		
PT( $\leq 14 / > 14$ s)	0.18		
WBC( $\leq 4 / > 4 \times 10^9$ /L)	0.16		
HB( $\leq 120 / > 120$ g/L)	0.33		
PLT( $\leq 100 / > 100 \times 10^9$ /L)	0.94		
Cr( $\leq 110 / > 110$ umol/L)	0.17		
Cirrhosis(yes/no)	0.32		
Child-Pugh classification(A/B)	0.23		
Ascites(yes/no)	0.10		
ICGR15 ( $\leq 10\% / > 10\%$ )	0.03		
Tumor size ( $\leq 5 / > 5$ cm)	<0.001	0.001	1.687 (1.256-2.266)
Tumor number (1/ $> 1$ )	<0.001	0.004	3.177 (1.458-6.923)
Bilobar disease (yes/no)	0.79		
Extent ( $\leq 50\% / > 50\%$ )	0.12		

Capsule (yes/no)	<0.001	<0.001	0.478 (0.369-0.619)
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HBV, hepatitis B virus; HCV, hepatitis C virus; AFP, alpha fetoprotein; CA199, carbohydrate antigen 19-9; GGT, gamma-glutamyl transpeptidase; ALP, Alkaline phosphatase; AST, aspartate aminotransferase; ALT, alanine transaminase; ALB, albumin; PT, prothrombin time; TBIL, total bilirubin; WBC, white blood cell; Hb, hemoglobin; PLT, platelet; Cr, creatinine; ICGR15, indocyanine green retention at 15 min.

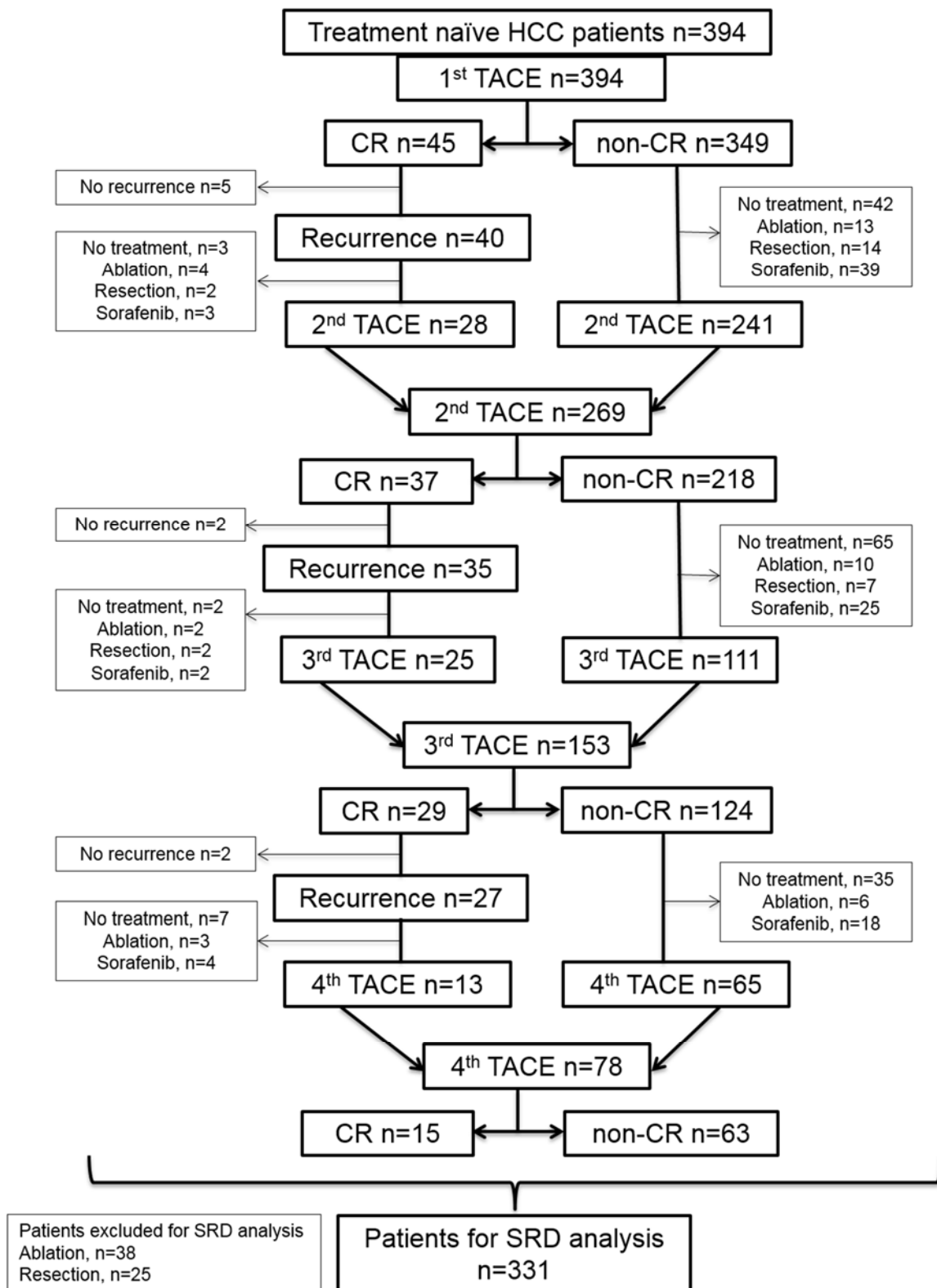
**eTable 5.** Response outcome after repeated cTACE during follow-up

		Indication to repeat cTACE					
		Recurrence after CR		Non-CR			
		n	%	PR	SD	PD	%
Tumor response to 2 <sup>nd</sup> TACE	CR	15	53.6	14	5	3	9.1
	PR	6	21.4	10	21	16	19.5
	SD	2	7.1	0	102	34	56.4
	PD	5	17.9	1	9	26	19.0
Tumor response to 3 <sup>rd</sup> TACE	CR	13	52.0	9	1	6	14.4
	PR	9	36.0	12	10	5	24.3
	SD	1	4.0	0	56	0	50.5
	PD	3	12.0	1	8	3	10.8
Tumor response to 4 <sup>th</sup> TACE	CR	5	38.4	7	1	2	15.4
	PR	6	46.2	12	8	1	32.3
	SD	0	0	0	26	0	40.0
	PD	2	15.4	1	5	2	12.3

cTACE, conventional transarterial chemoembolization; CR: complete response; PR: partial response; SD: stable disease; PD: progressive disease.

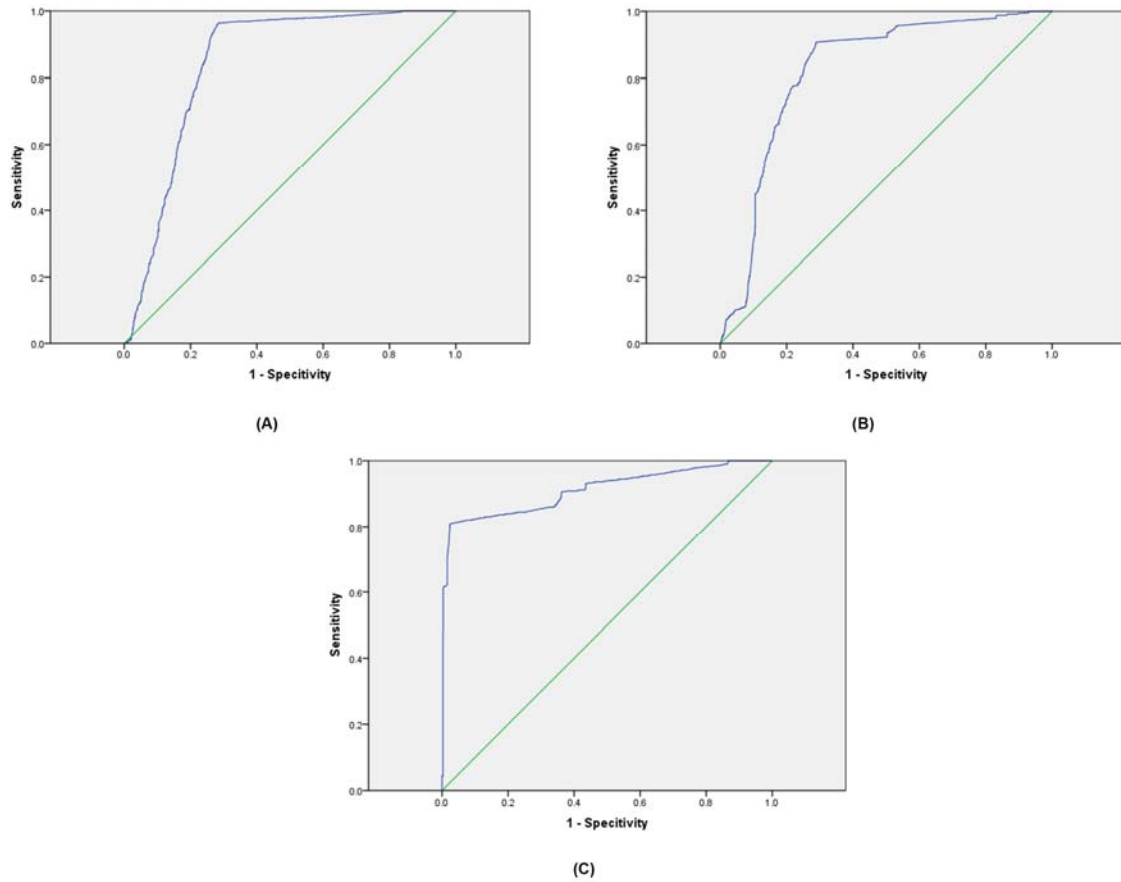


**eFigure 1:** Flow chart summarizing the actual conventional cTACE repetition in the validation cohort based on a schedule “on demand”.



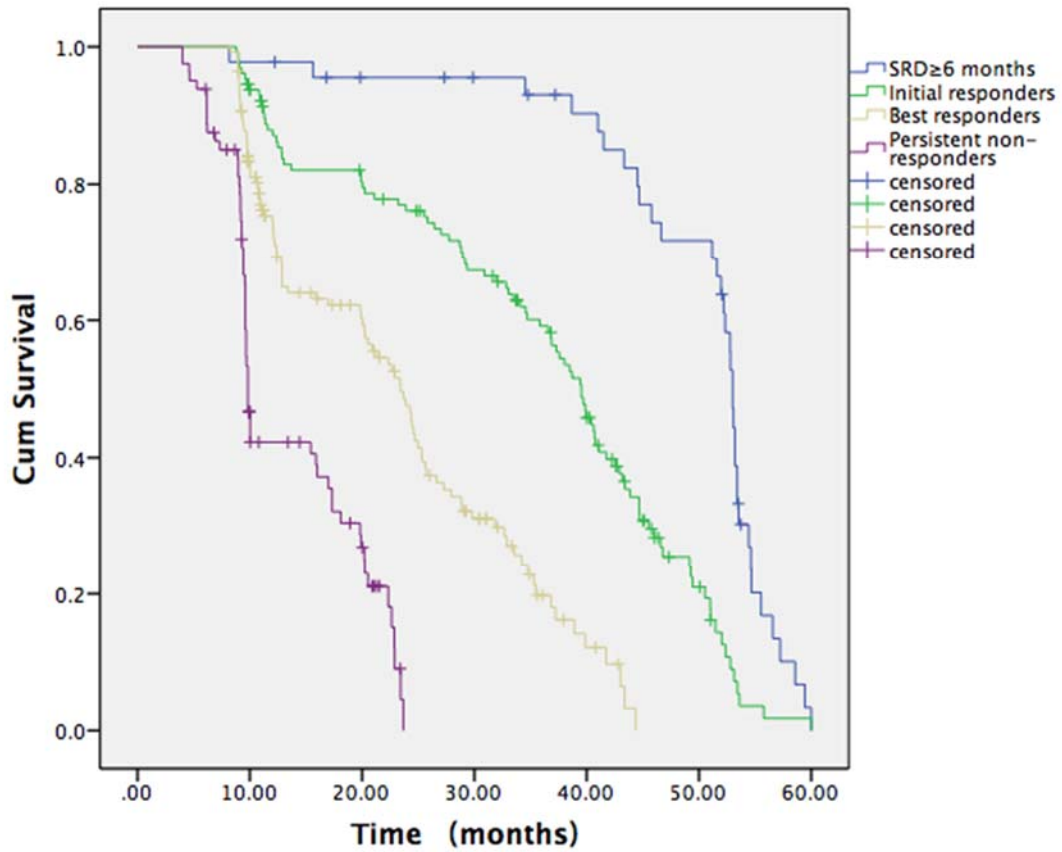
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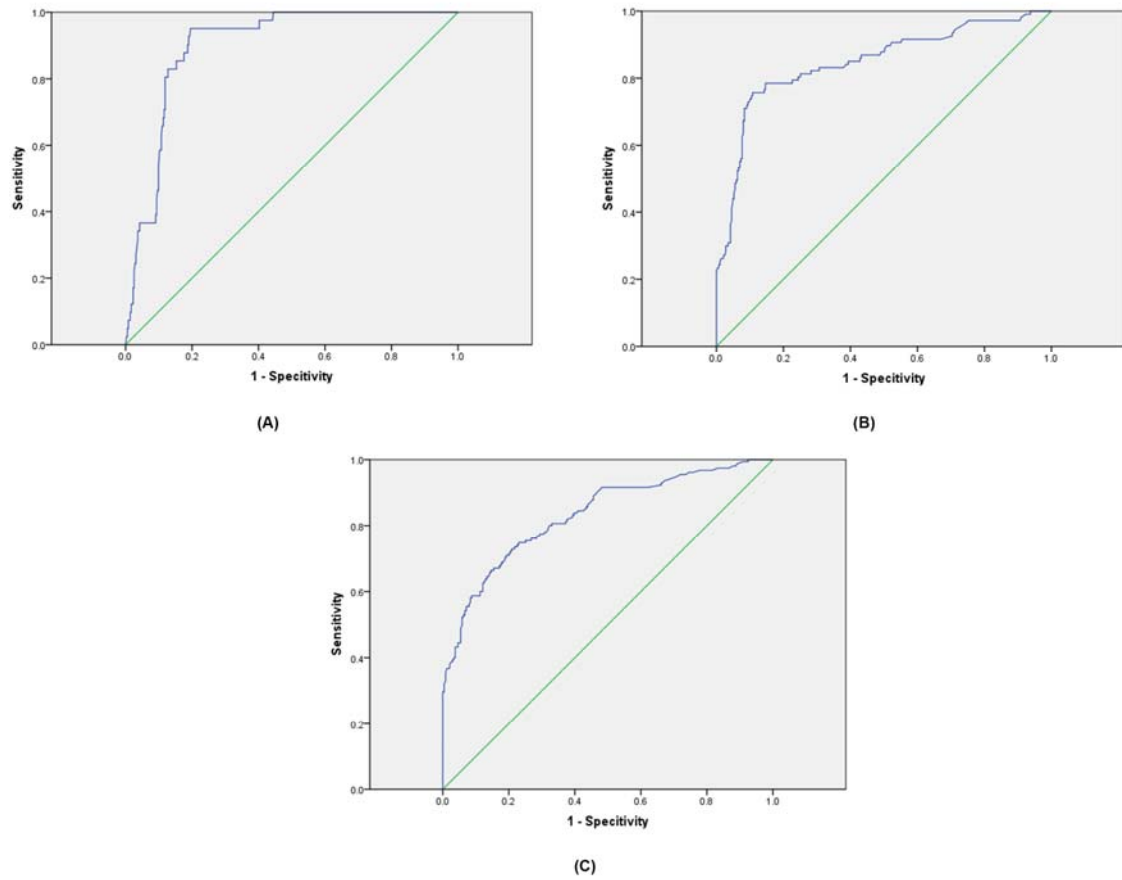
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