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WHAT IS THE BEST APPROACH FOR TRANS-ARTERIAL THERAPY IN HCC?

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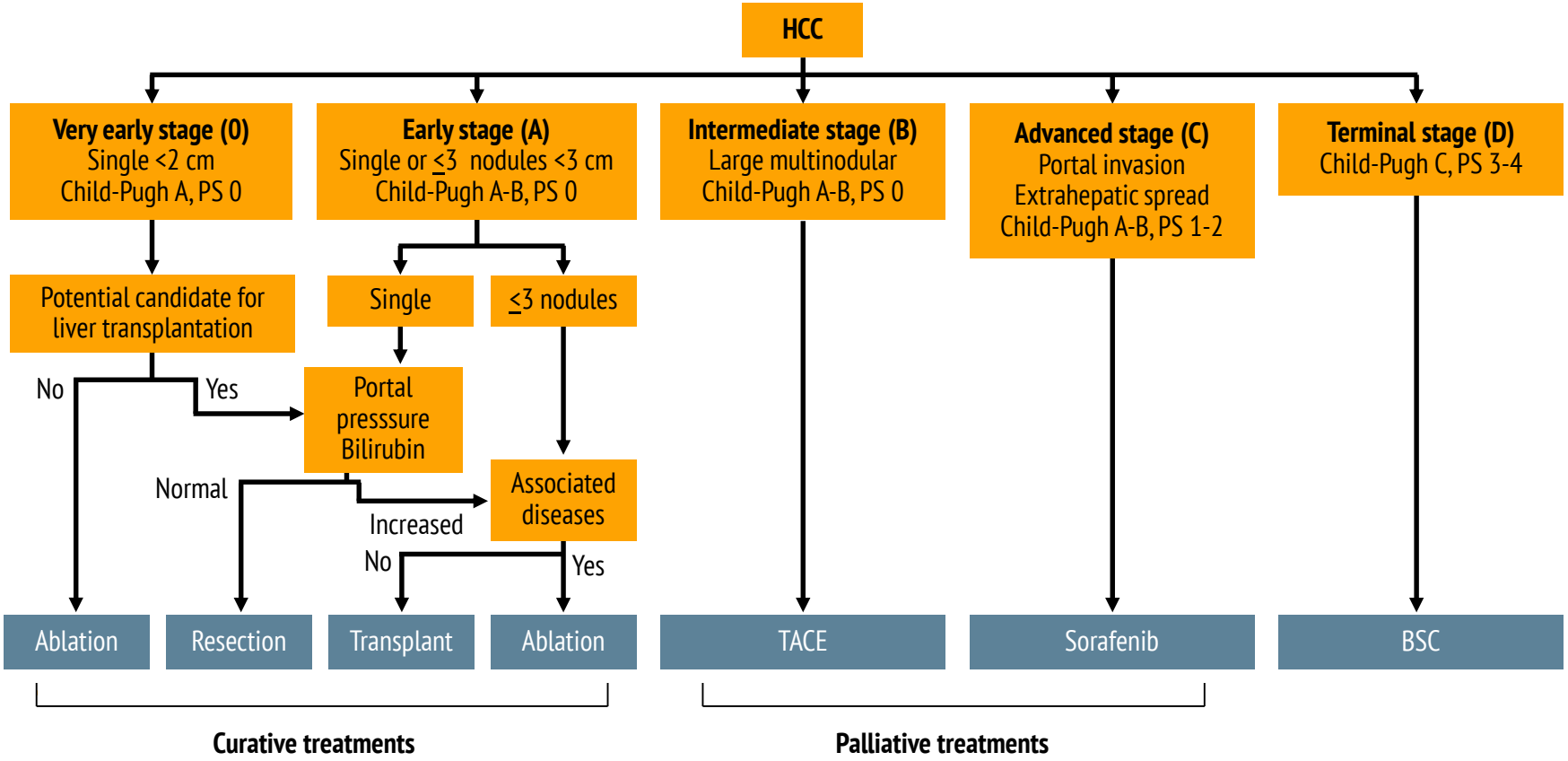
BCLC STAGING SYSTEM



Forner A et al. The Lancet 2012; 379(9822):1245-1255

BCLC, Barcelona Clinic Liver Cancer; PS, Performance Status; TACE, trans-arterial chemoembolization; BSC, best supportive care

SELECTED STUDIES ON DOWNSTAGING THERAPY FOR HCC BEFORE LIVER TRANSPLANTATION N (%)

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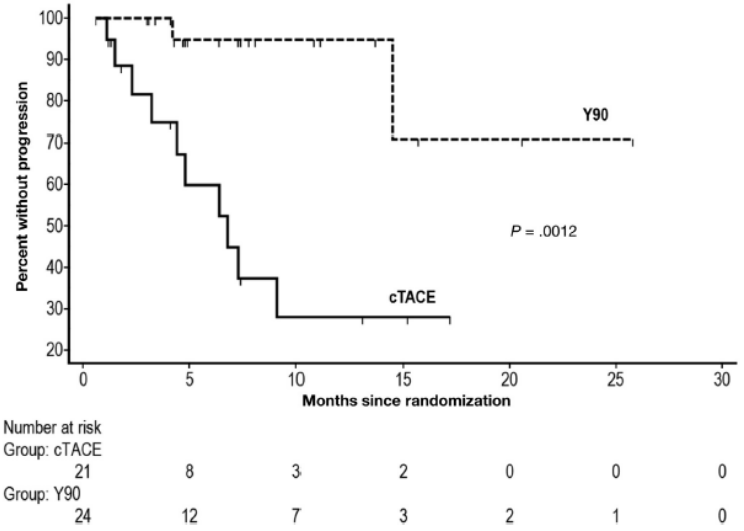
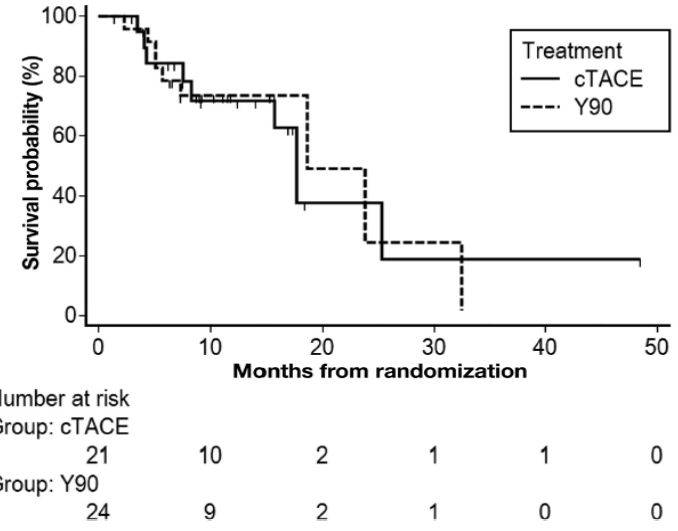
Ref.	Treatment	Pts	Inclusion criteria	Succesful downstage -Criteria -Rate	Transplanted pts	Recurrence free survival after LT	Intention to treat survival	Survival after LT
Graziadei et al.	TACE	36	HCC >5 cm	Decreased size >50% 11 / 36 (31)	10	Recurrent HCC: 3 pts (30)	31% at 5 yr	41% at 4 yr
Otto et al.	TACE	62	Beyond MC	Decreased size ≥30% 34 / 62 (55)	27	68% at 5 yr	NA	73.2% at 5 yr
Cillo et al.	TACE, RFA, PEI, Resection	40	Beyond MC WD or MD HCC	Maintenance of selection criteria NA	31	Recurrent HCC: 0 pts	79% at 5 yr	>90% at 3 yr
Chapman et al.	TACE	76	Beyond MC	MC 18/76 (24)	17	50% at 5 yr	NA	93.8% at 5 yr
Yao et al.	TACE, RFA, Resection	61	1 HCC 5-8 cm 2-3 HCCs 3-5 cm, total diameter ≤8 cm 4-5 HCCs ≤3 cm total diameter ≤8 cm	UCSF 43 / 61 (71)	35	92% at 2 yr	69% at 4 yr	92% at 2 yr
Ravaioli et al.	Multimodal (TACE, PEI, RFA, Resection)	48	1 HCC 5-8 cm 2 HCCs 3-5 cm, total diameter ≤8 cm 3-5 HCCs ≤4 cm total diameter ≤12 cm	MC and AFP <400 ng/mL 32 / 48 (67)	32	71% at 3 yr	62% at 3 yr	NA
Lewandowski et al.	TACE (43 patients) TARE (43 patients)	86	UNOS T3	MC TACE 11 / 35 (31) TARE 25 / 43 (58)	TACE 11 TARE 9	TACE 73% at 1 yr TARE 89% at 1 yr	TACE 19% at 3 yr TARE 59% at 3 yr	NA
De Luna et al.	TACI	27	Beyond MC	MC 17 / 27 (63)	15	NA	84.1% at 3 yr	78.8% at 3 yr
Jang et al.	TACE	386	Beyond MC	MC or complete tumor necrosis 160 / 386 (41.5)	37	66.3% at 5 yr	NA	54.6% at 5 yr
Barakat et al.	TACE, TARE RFA Resection	32	Beyond UCSF (18 pts) Beyond MC (14 pts)	UNOS T2 18 / 32 (56.3)	13	Recurrent HCC: 2 pts (15.4%)	NA	75% at 2 yr
Bargellini et al.	TACE	33	Beyond MC	Complete or partial response, or stable disease according to mRECIST criteria NA	33	74.4% at 5 yr	NA	72.5% at 5 yr
Bova et al.	TACE, TAE	48	Beyond MC	MC AFP <100 ng/mL 19 / 48 (39)	9	Recurrent HCC: 1 pt (11.1%)	NA	NA
Lei et al.	TACE, RFA, Resection, HIFU	58	Beyond MC Within UCSF	MC NA	58	63.8% at 5 yr	NA	74.1% at 5 yr

Pompili M et al. World J Gastroenterol 2013; 19(43):7515-7530

TARE, trans-arterial radioembolization; RFA, radiofrequency ablation; PEI, percutaneous liver injection; MC, Milan criteria; AFP, alpha-fetoprotein; UNOS, United Network for Organ Sharing; TACI, trans-catheter arterial chemoinfusion; UCSF, University of California San Francisco

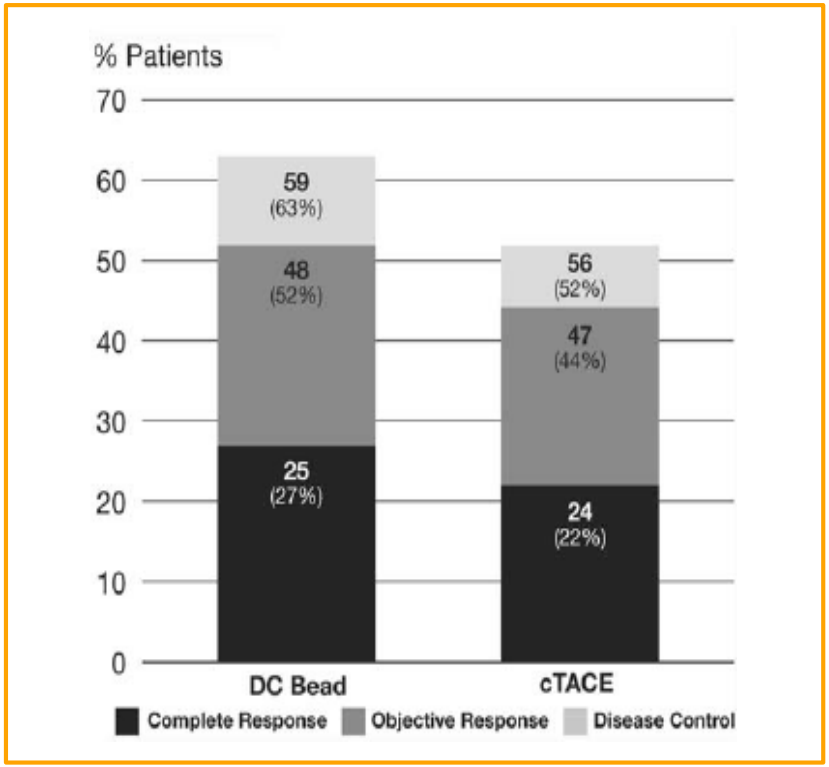
Y90 RADIOEMBOLIZATION SIGNIFICANTLY PROLONGS TIME TO PROGRESSION COMPARED WITH CHEMOEMBOLIZATION IN PATIENTS WITH HCC





Salem R et al. Gastroenterology 2016; 151(6):1155-1163
Y90, Yttrium-90; cTACE, conventional trans-arterial chemoembolization

PROSPECTIVE RANDOMIZED STUDY OF DOXORUBICIN-ELUTING-BEAD EMBOLIZATION IN THE TREATMENT OF HCC: RESULTS OF THE PRECISION V STUDY



Effects of systemic doxorubicin (safety population)

Event/SWOG toxicity grade	DC Bead (n=93)		cTACE (n=108)	
	No. of events	No. of patients	No. of events	No. of patients
Alopecia Grade 1 Grade 2	1 1 0	1 (1.1%)	23 12 11	22 (20.4%)
Marrow suppression Grade 1 Grade 2 Grade 3 Grade 4	5 2 2 1 0	5 (5.4%)	8 1 1 4 2	6 (5.6%)
Mucositis Grade 1 Grade 2 Grade 3	4 4 0 0	4 (4.3%)	7 5 1 1	6 (5.6%)
Skin discoloration Grade 1 Grade 2	2 1 1	2 (2.2%)	2 0 2	2 (1.9%)

Lammer J et al. Cardiovasc Intervent Radiol 2010; 33(1):41-52
DC Bead, drug-eluting bead; SWOG, Southwest Oncology Group

RANDOMIZED TRIAL OF HEPATIC ARTERY EMBOLIZATION FOR HCC USING DOXORUBICIN-ELUTING MICROSPHERES COMPARED WITH EMBOLIZATION WITH MICROSPHERES ALONE

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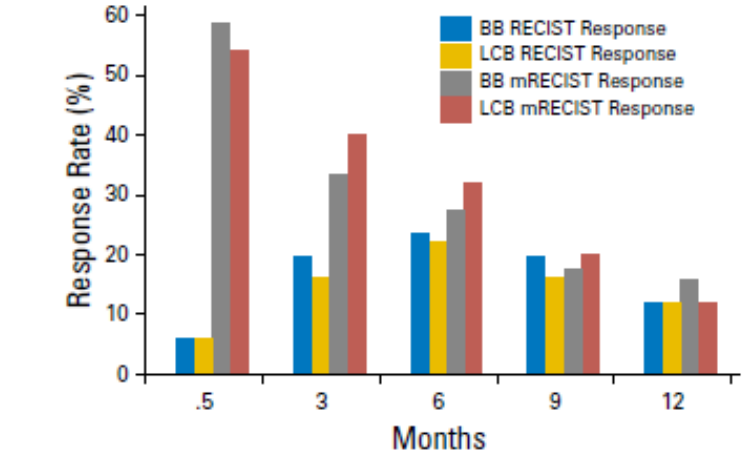
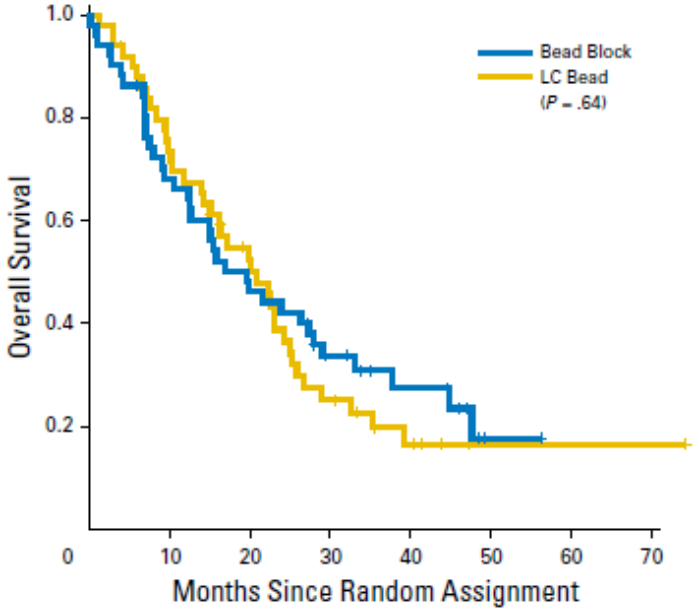


BB RECIST	5.9	19.6	23.5	19.6	11.8
LCB RECIST	6.0	16.0	22.0	16.0	12.0
BB mRECIST	58.8	33.3	27.5	17.6	15.7
LCB mRECIST	54.0	40.0	32.0	20.0	12.0
EASL BB	81.2				
EASL LCB	88.0				



Brown KT et al. J Clin Oncol 2016; Jun 10;34(17):2046-2053

BB, Bead Block; RECIST, Response Evaluation Criteria in Solid Tumors; LCB, LC Bead; EASL, European Association for the Study of the Liver

EFFICACY AND SAFETY OF SIRT WITH Y-90 RESIN MICROSPHERES COMPARED WITH SORAFENIB IN LOCALLY ADVANCED AND INOPERABLE HCC (SARAH)

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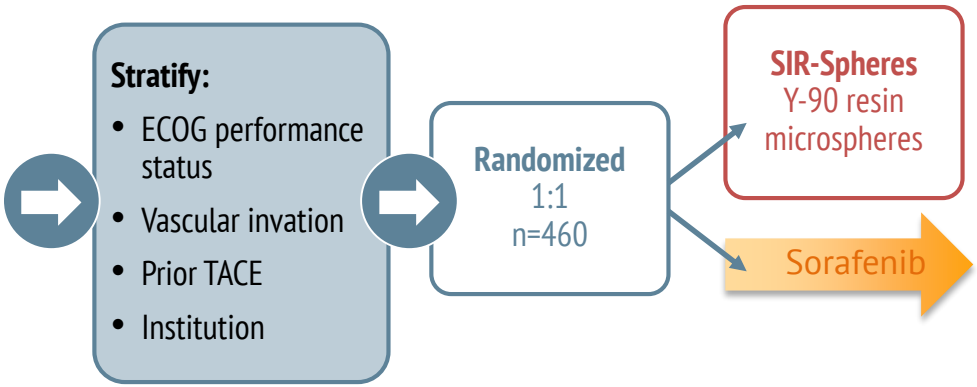
Eligible patients:

- Unresectable HCC
- BCLC stage C or
- BCLC stage A/B:
  - New lesions post-radical therapy and unsuitable for further radical therapy or
  - No objective response after ≤2 TACE sessions
- Child-Pugh class A or B ≤7 points
- ECOG performance status 0-1
- Fit for sorafenib and SIRT

Schema:



Vilgrain V et al. Lancet Oncol 2017; October 26; ePub: doi.org/10.1016/S1470-2045(17)30683-6
SIRT, selective internal radiotherapy; ECOG, Eastern Cooperative Oncology Group

EFFICACY AND SAFETY OF SIRT WITH Y-90 RESIN MICROSPHERES COMPARED WITH SORAFENIB IN LOCALLY ADVANCED AND INOPERABLE HCC (SARAH STUDY)

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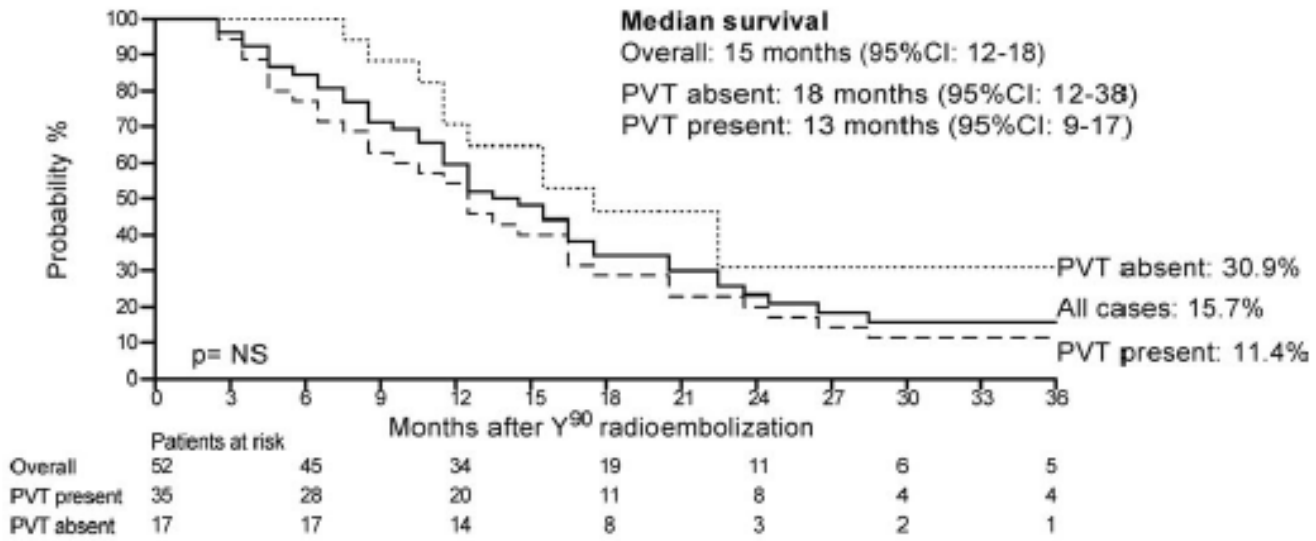
	SIRT (n=237)	Sorafenib (n=222)	P-value
Median OS (mo)	8.0	9.9	0.179
Response Rate (%)	19.0	11.6	0.042
Median PFS (mo)	4.1	3.7	0.765
Treatment related AE (%)	76.5	94	<0.001
Grade 3 or higher AE	40.7	63.0	<0.001

- Improved QoL as evaluated by EORTC QLQ-C30 questionnaire (p=0.005)
- In patients with locally advanced or intermediate-stage HCC after unsuccessful TACE, OS did not significantly differ between the two groups. Quality of life and tolerance might help when choosing between the two treatments

Vilgrain V et al. Lancet Oncol 2017; October 26; ePub: doi.org/10.1016/S1470-2045(17)30683-6
OS, overall survival; PFS, progression free survival; AE, adverse event; EORTC QLQ, European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire

Y90 RADIOEMBOLIZATION FOR INTERMEDIATE-ADVANCED HCC: A PHASE 2 STUDY



Mazzaferro et al. Hepatology 2013; 57(5):1826-1837
PVT, portal vein thrombosis

OPEN-LABEL PROSPECTIVE STUDY OF THE SAFETY AND EFFICACY OF GLASS-BASED Y90 RADIOEMBOLIZATION FOR INFILTRATIVE HCC WITH PORTAL VEIN THROMBOSIS

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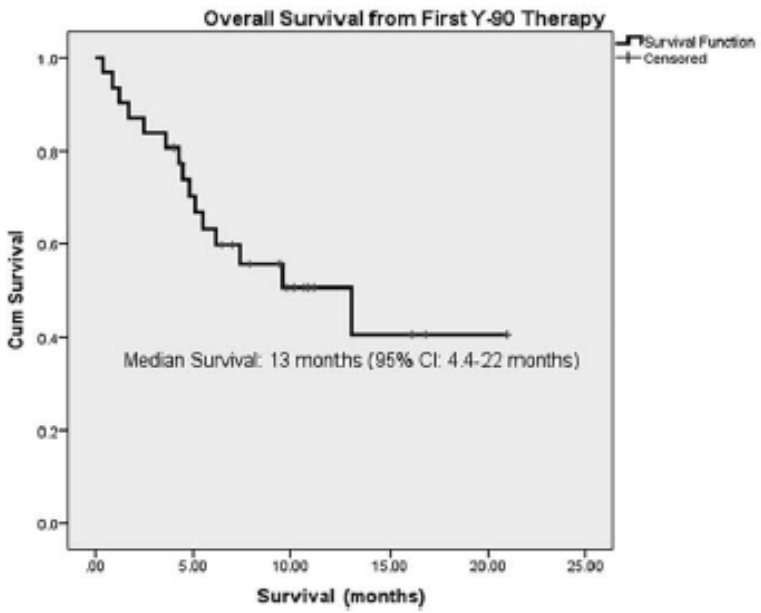

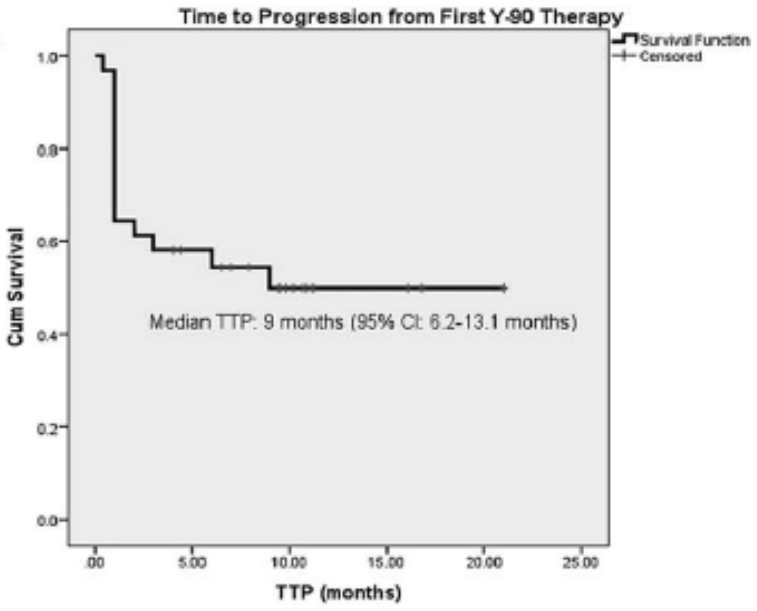

Kokabi N et al. Cancer 2015; 121(13):2164-2174

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