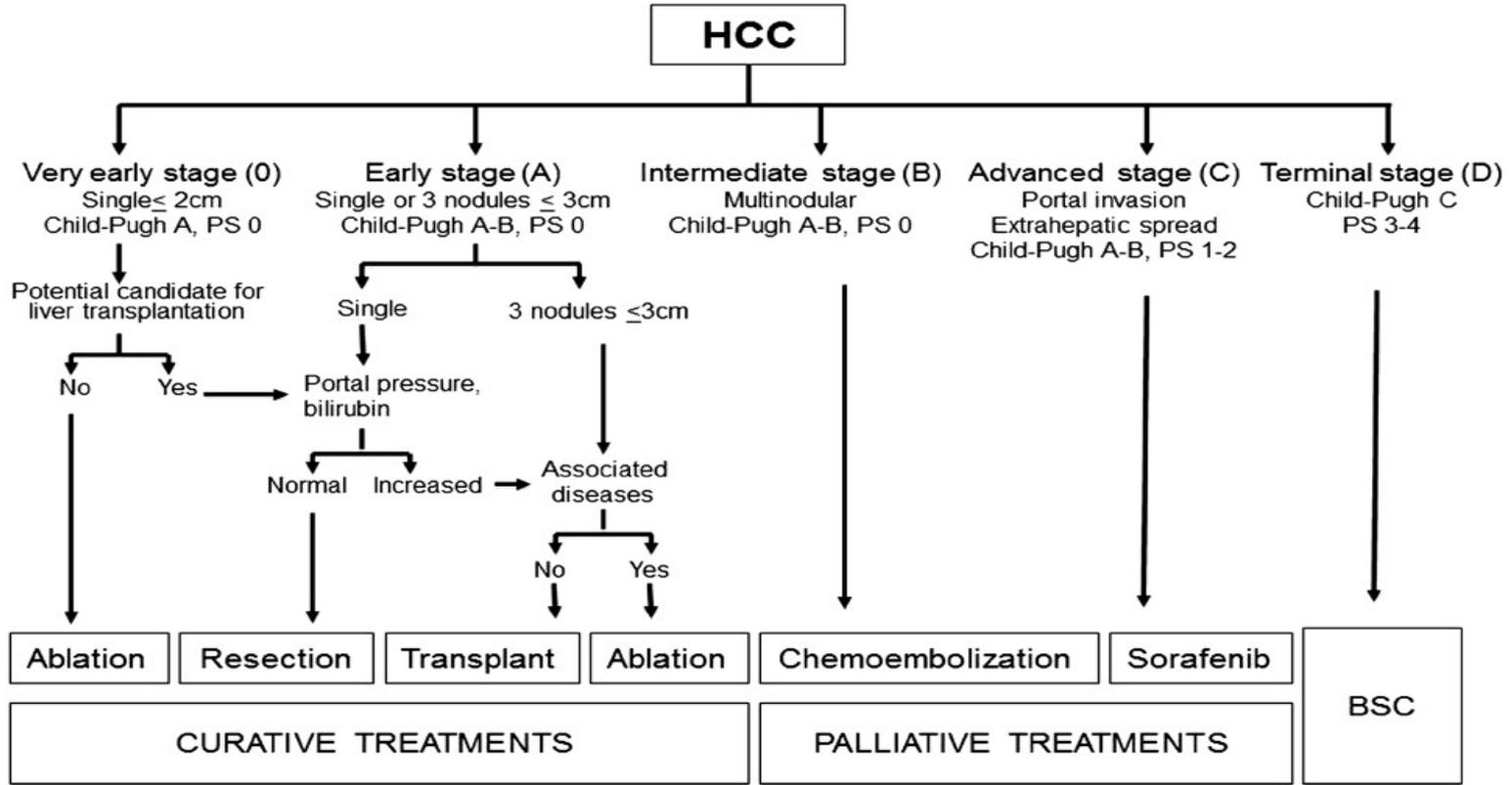
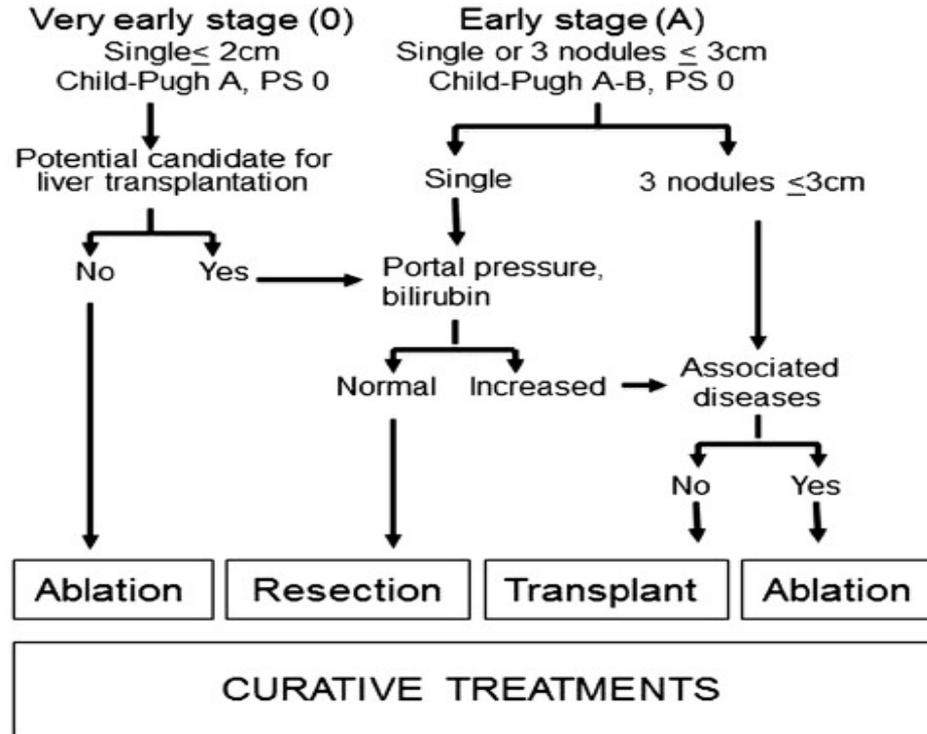


Early HCC on HCV cirrhosis

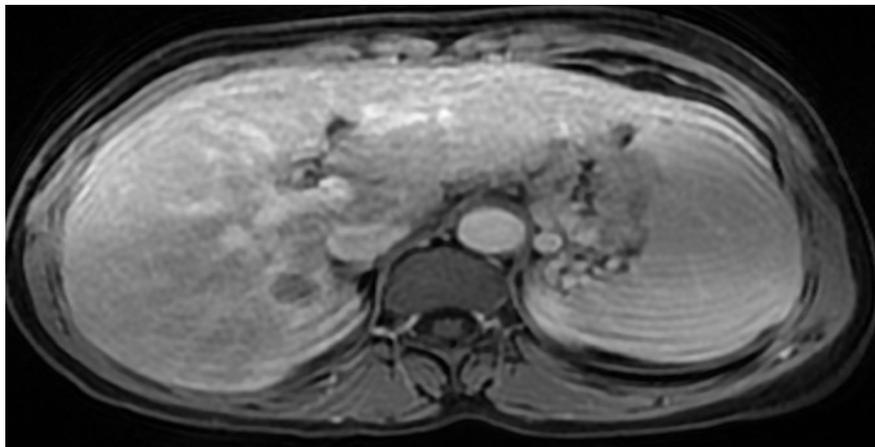
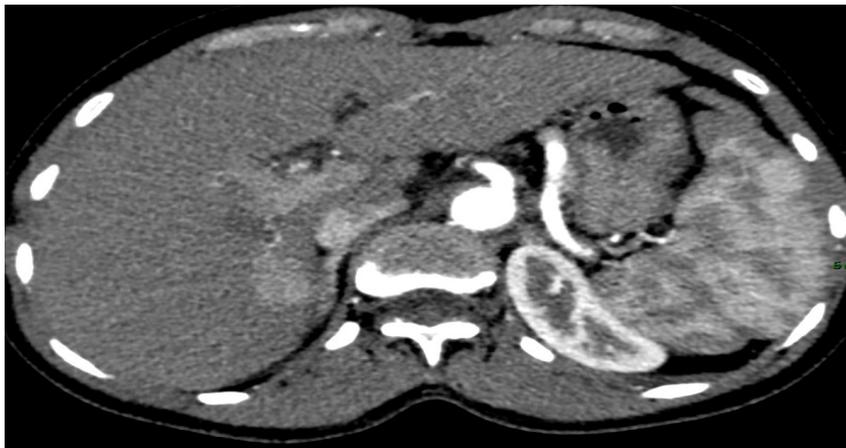
# Guidelines For Management of HCC



# Very Early and Early HCC



- 56 yo woman
- HCV Cirrhosis
  - No other comorbidities
  - BMI 22
  - Blood group O
- 2.7 cm Solitary HCC
  - Segments 6-7
  - AFP 7
- Underlying Liver Function
  - Child's A5
  - MELD 7
- Portal hypertension
  - Platelets count 95,000
  - Mild splenomegaly



# Treatment options

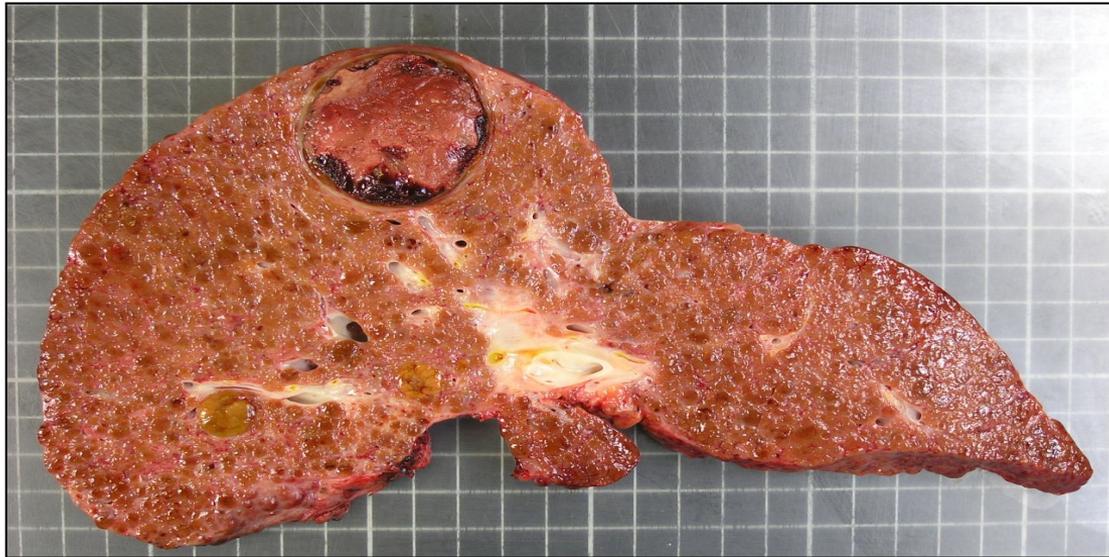
- ❑ Resection

- ❑ Ablation

- ❑ Transplantation

# Liver Transplantation for HCC

Ideal: Treats the tumors and underlying disease

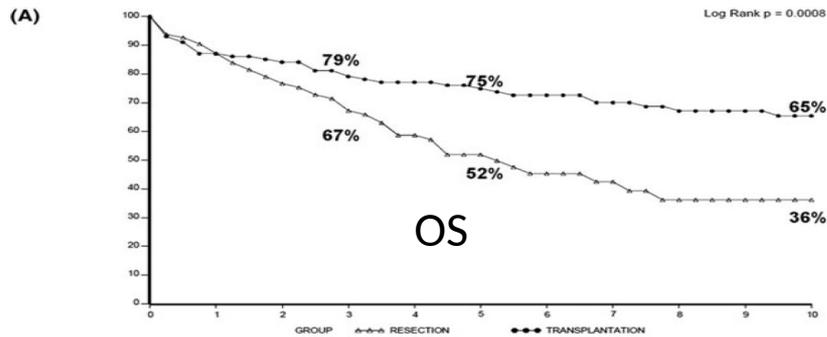


# Resection or Transplantation for Early Hepatocellular Carcinoma in a Cirrhotic Liver

(Ann Surg 2012;256: 883–891)

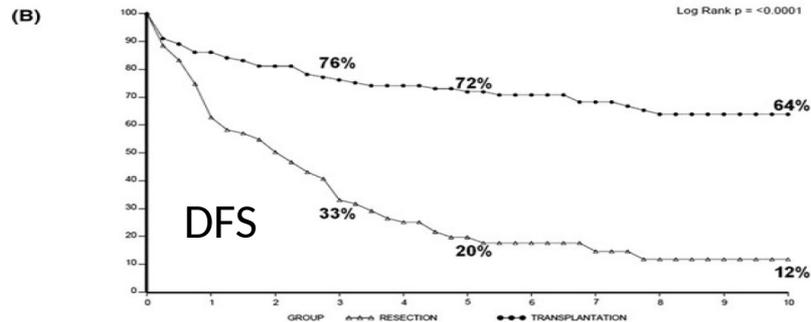
Does Size Define the Best Oncological Strategy?

Rene Adam, MD, PhD,\*†‡ Prashant Bhangui, MS,\* Eric Vibert, MD,\*†‡ Daniel Azoulay, MD, PhD,\*†§  
 Gilles Pelletier, MD, PhD,\* Jean-Charles Duclos-Vallée, MD, PhD,\*†‡ Didier Samuel, MD, PhD,\*†‡  
 Catherine Guettier, MD,\* and Denis Castaing, MD\*†‡



	Total	1 yr	2 yrs	3 yrs	4 yrs	5 yrs	6 yrs	7 yrs	8 yrs	9 yrs	10 yrs
RESECTION	97	78	61	48	37	27	17	15	11	9	6
TRANSPLANTATION	101	88	85	79	74	66	63	50	44	39	34

198 patients 1990-2010  
 All resections Child's A  
 Most Transplants Child's C



	Total	1 yr	2 yrs	3 yrs	4 yrs	5 yrs	6 yrs	7 yrs	8 yrs	9 yrs	10 yrs
RESECTION	96	57	43	26	17	10	6	5	4	3	2
TRANSPLANTATION	101	87	82	76	71	63	61	49	43	38	34

## Liver Transplantation for HCC: An Effective but Small Part of the Treatment

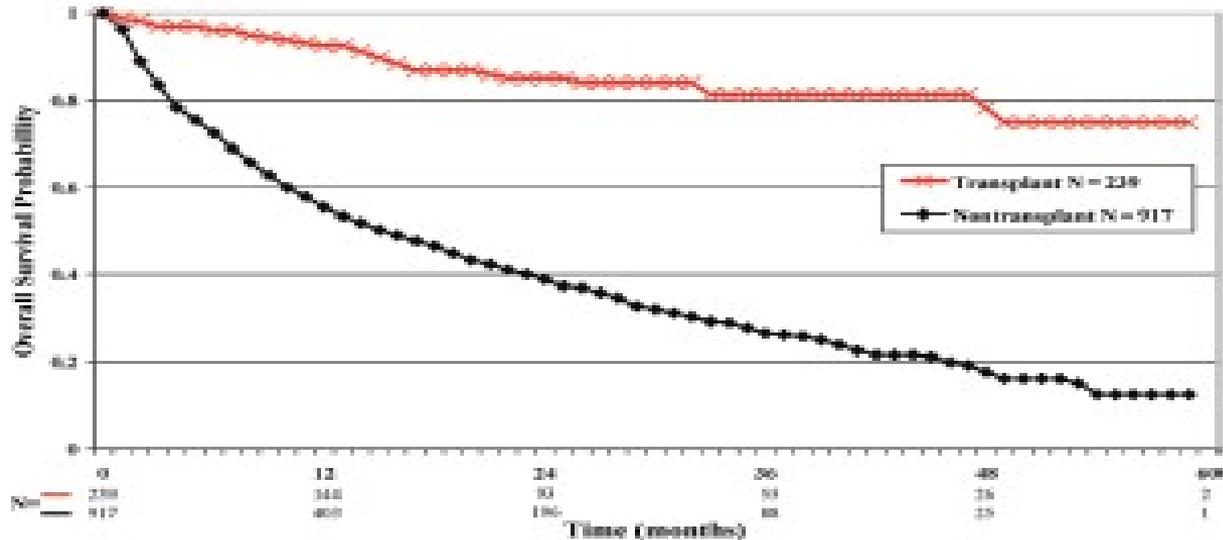
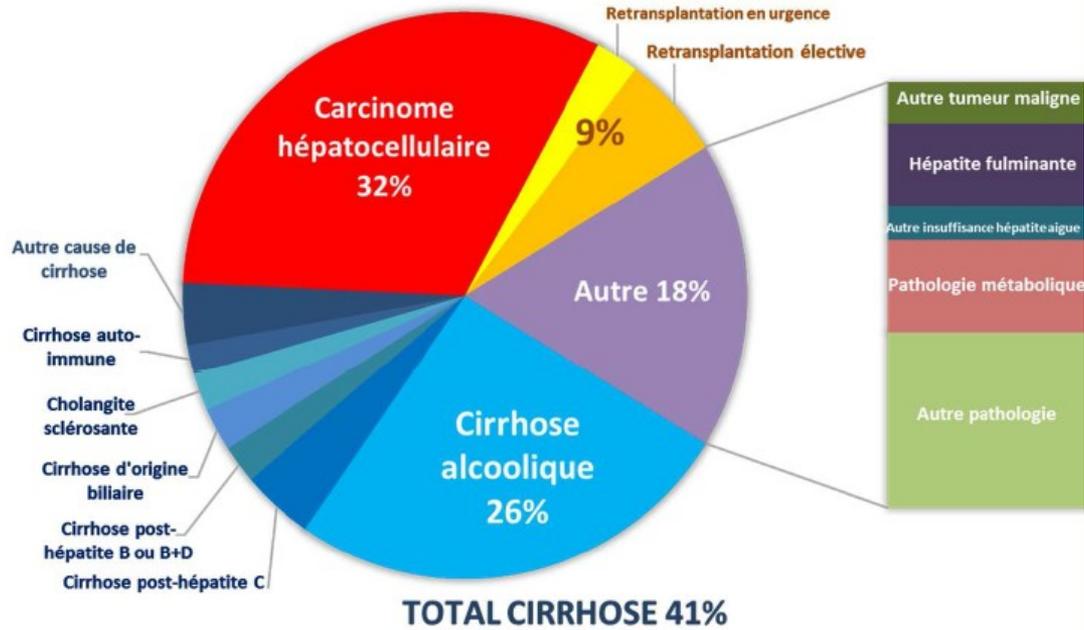


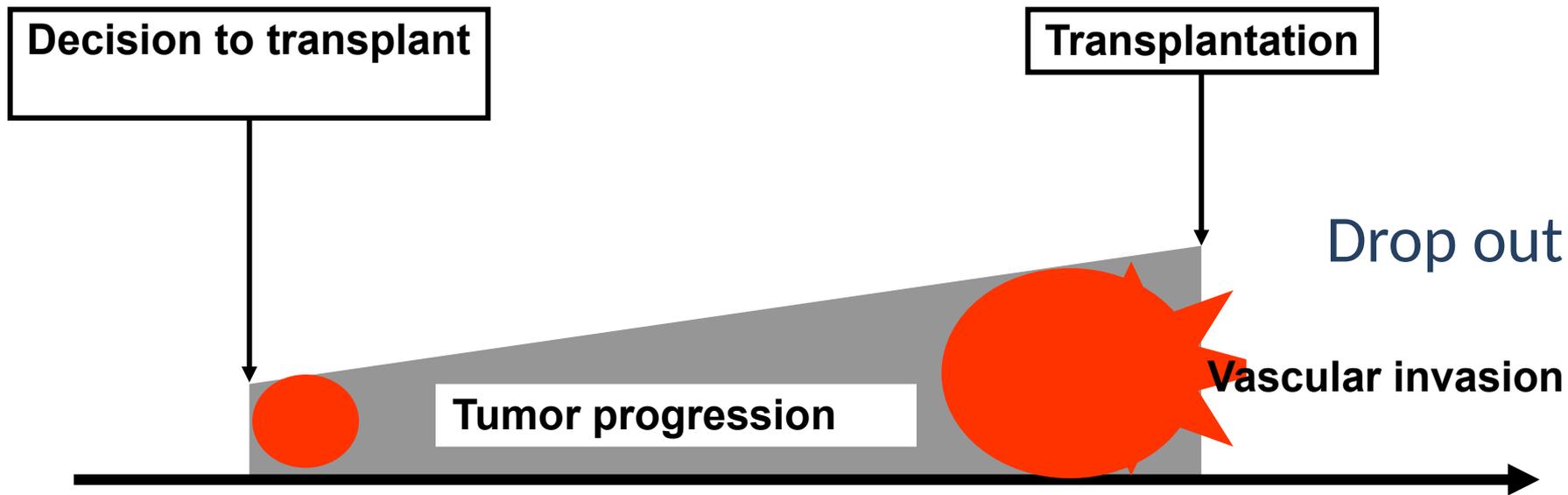
Figure 1. Kaplan-Meier survival curves for transplant versus nontransplant for hepatocellular carcinoma.

21% were transplanted

# Liver transplantation in France (2016-2017)



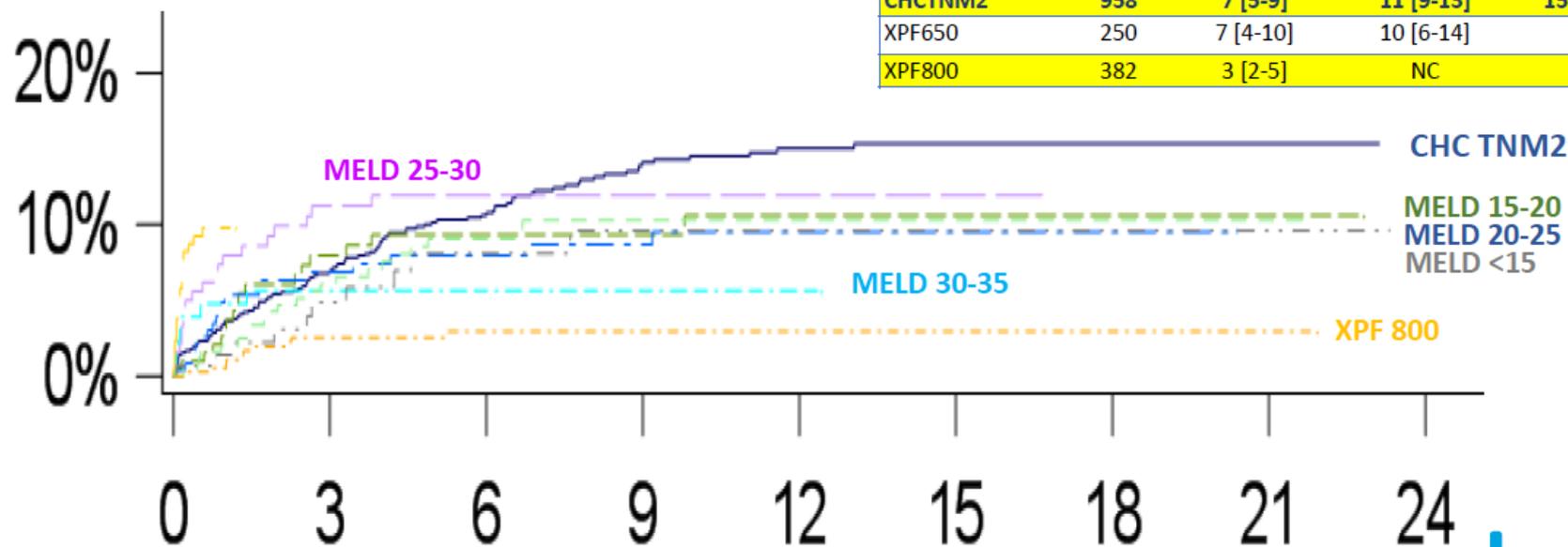
# Transplantation for HCC



Bridge treatment ?  
Intent to treat

# Drop out Rate 2016-2017

	N	à 3 mois	à 6 mois	à 12 mois
Cirrhose <15	149	6 [3-11]	10 [5-16]	NC
Cirrhose 15-20	201	9 [5-13]	11 [6-16]	NC
Cirrhose 20-25	238	7 [4-11]	9 [5-13]	NC
<b>Cirrhose 25-30</b>	<b>183</b>	<b>12 [8-17]</b>	NC	NC
Cirrhose 30-35	127	7 [4-9]	NC	NC
Cirrhose 35-40	211	10 [-16]	NC	NC
<b>CHCTNM2</b>	<b>958</b>	<b>7 [5-9]</b>	<b>11 [9-13]</b>	<b>15 [13-18]</b>
XPF650	250	7 [4-10]	10 [6-14]	NC
<b>XPF800</b>	<b>382</b>	<b>3 [2-5]</b>	NC	NC



# Liver Transplantation for HCC in France

1500 LT / year > 400 HCC

5000 new HCC per year

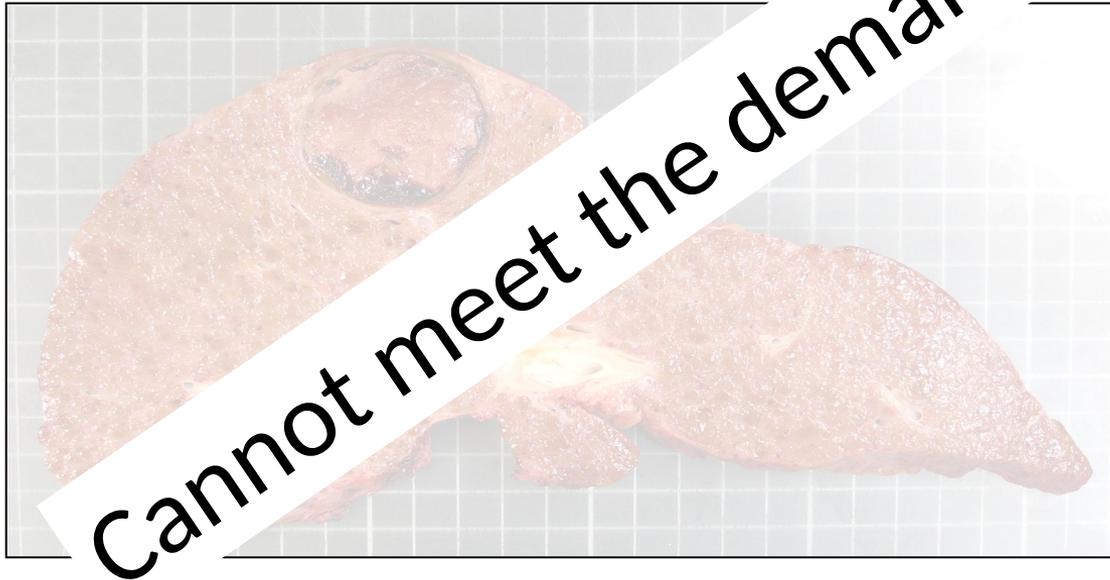
Screening

20% transplantable according to the Milan Criteria

Need 1000 LT for HCC

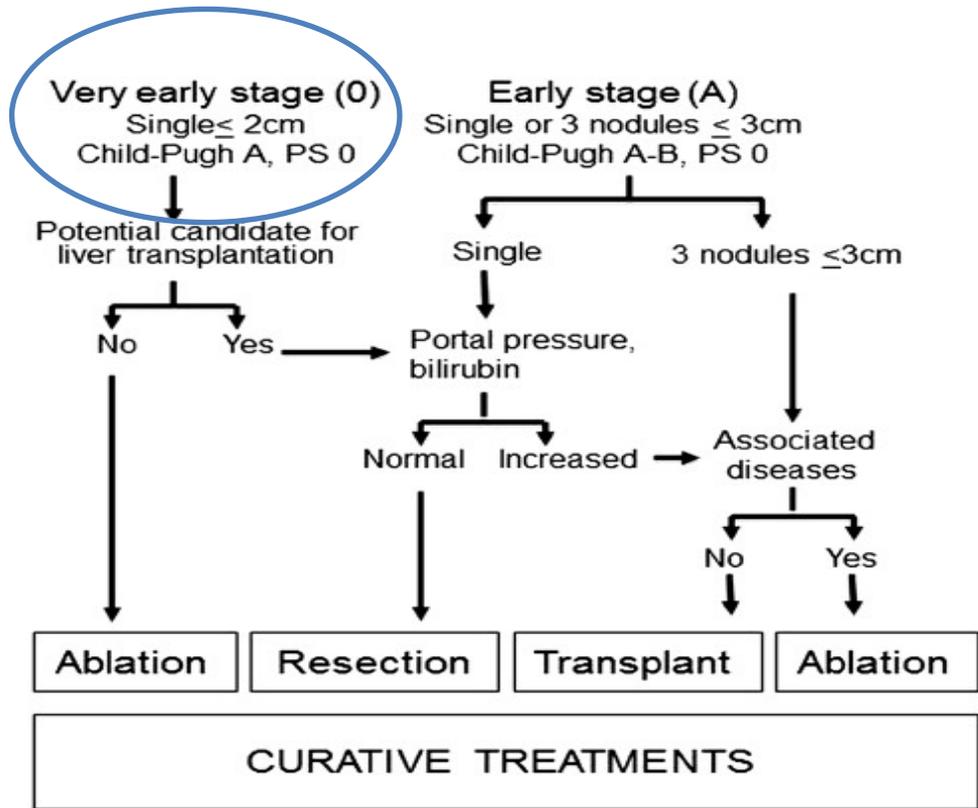
# Liver Transplantation for HCC

- Ideal: Treats the tumors and underlying disease



# Resection vs Ablation

# Very Early and Early HCC



# Metanalysis of Resection vs Ablation

Figure 3. Overall survival (OS) at 1-, 3- and 5-year in RCTs.

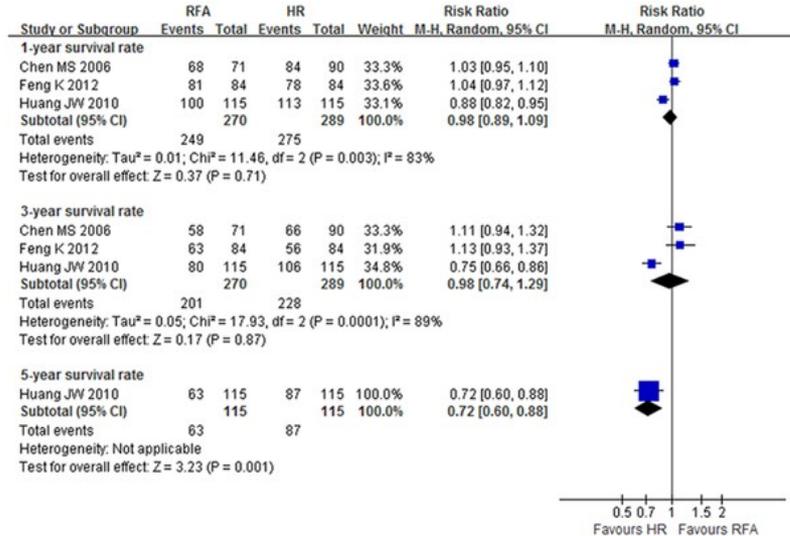
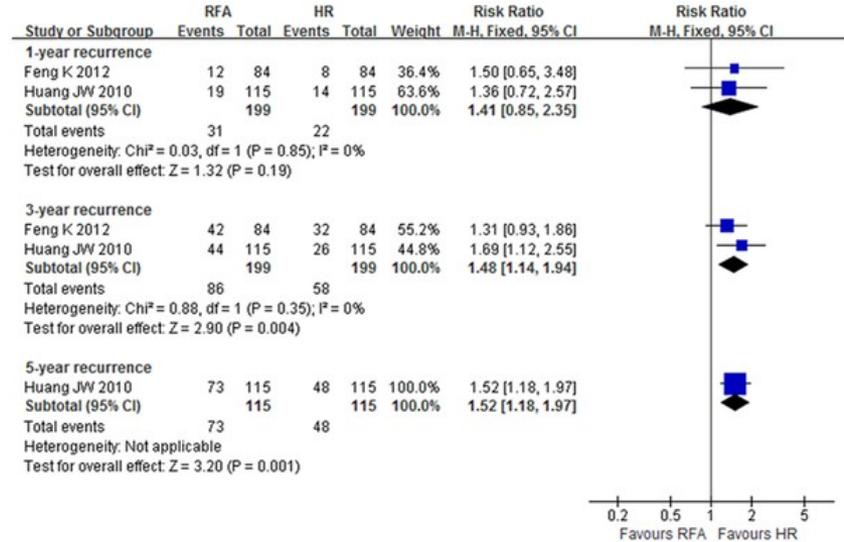
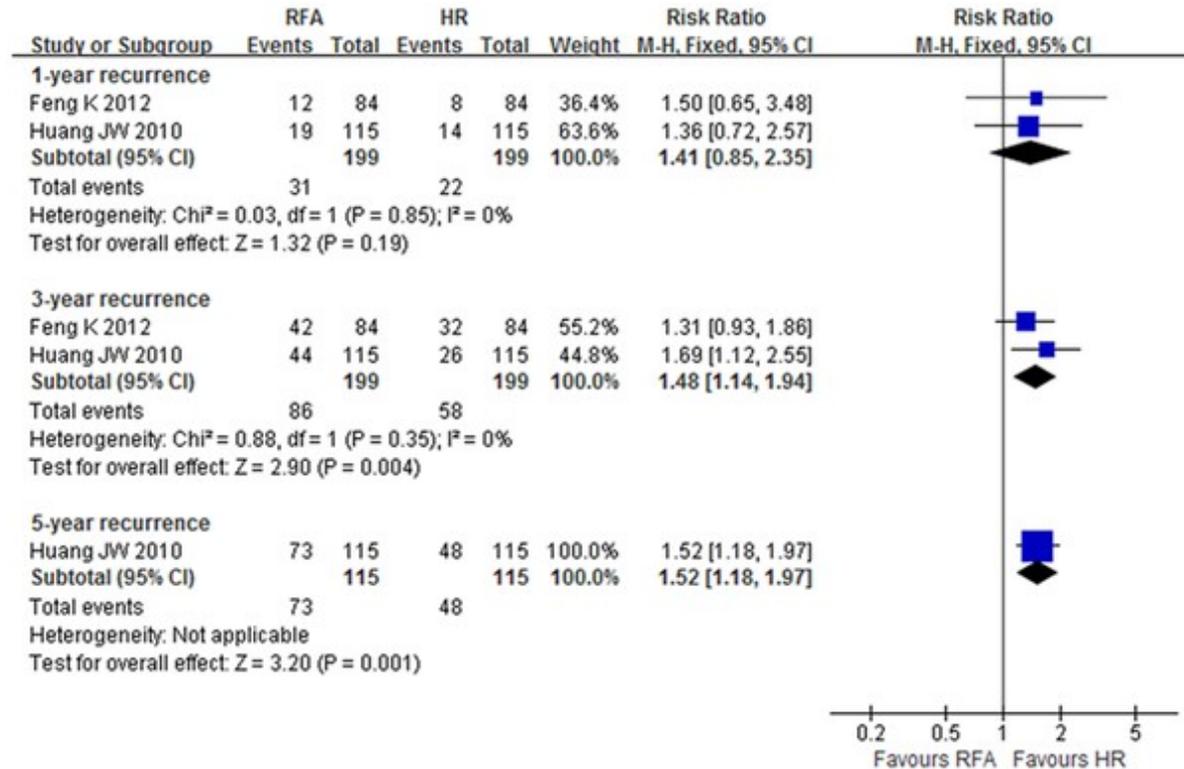


Figure 5. Recurrence rate at 1-, 3- and 5-year in RCTs.



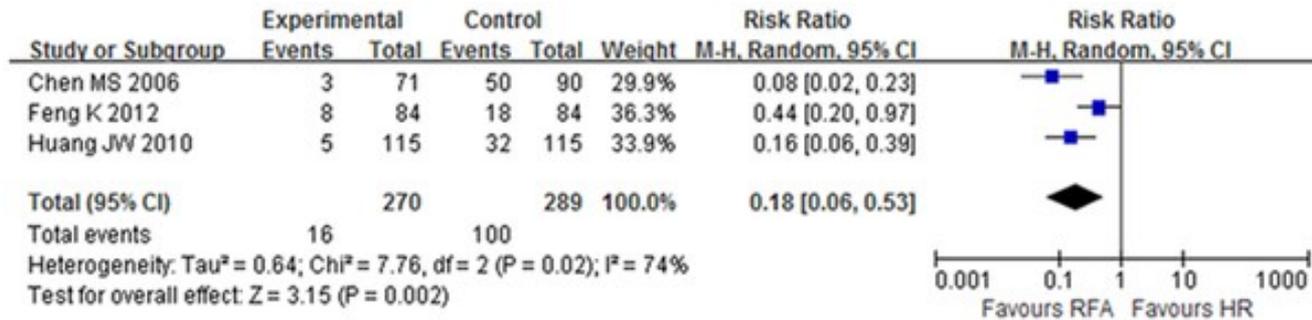
Wang Y, Luo Q, Li Y, Deng S, Wei S, et al. (2014) Radiofrequency Ablation versus Hepatic Resection for Small Hepatocellular Carcinomas: A Meta-Analysis of Randomized and Nonrandomized Controlled Trials. PLOS ONE 9(1): e84484. <https://doi.org/10.1371/journal.pone.0084484>  
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0084484>

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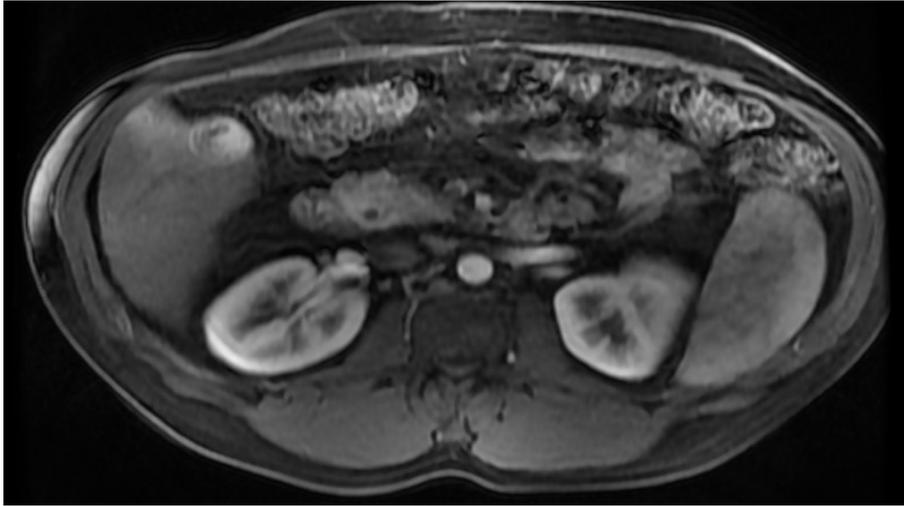
Wang Y, Luo Q, Li Y, Deng S, Wei S, et al. (2014) Radiofrequency Ablation versus Hepatic Resection for Small Hepatocellular Carcinomas: A Meta-Analysis of Randomized and Nonrandomized Controlled Trials. PLOS ONE 9(1): e84484. <https://doi.org/10.1371/journal.pone.0084484>  
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0084484>

Figure 6. Complication rate of RCTs.

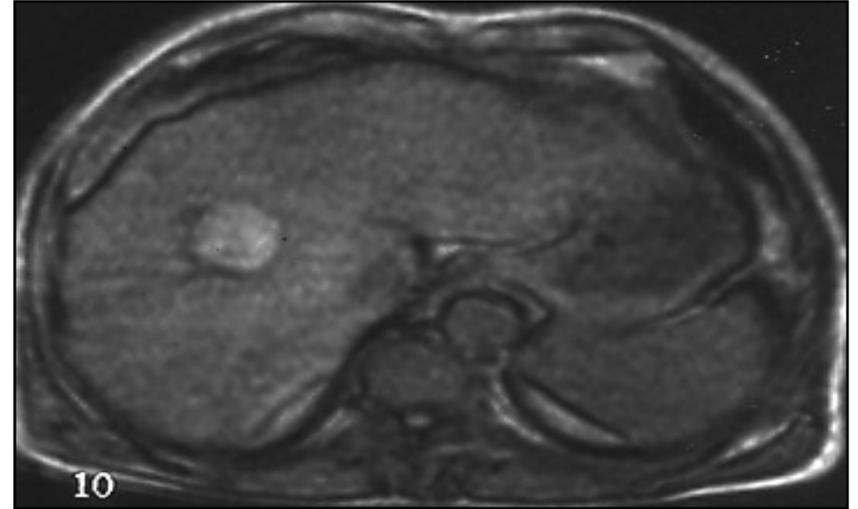


Wang Y, Luo Q, Li Y, Deng S, Wei S, et al. (2014) Radiofrequency Ablation versus Hepatic Resection for Small Hepatocellular Carcinomas: A Meta-Analysis of Randomized and Nonrandomized Controlled Trials. PLOS ONE 9(1): e84484. <https://doi.org/10.1371/journal.pone.0084484>  
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0084484>

Resection vs Ablation  
Superficial vs Deep lesions



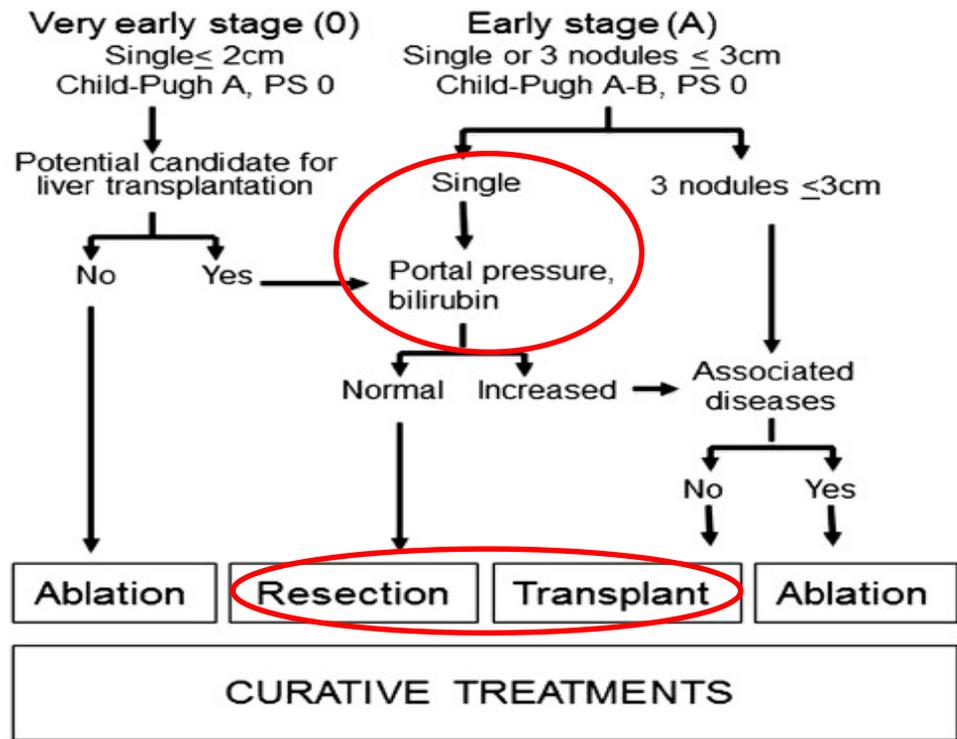
Resection



Ablation

# Resection

# Very Early and Early HCC



# Impact of Model for End-Stage Liver Disease (MELD) Score on Prognosis After Hepatectomy for Hepatocellular Carcinoma on Cirrhosis

Alessandro Cucchetti, Giorgio Ercolani, Marco Vivarelli, Matteo Cescon, Matteo Ravaioli, Giuliano La Barba, Matteo Zanello, Gian Luca Grazi, and Antonio Daniele Pinna

Liver Transplantation  
2006

Variables	MELD score <9 (n = 74)	MELD score between 9 and 10 (n = 56)	MELD score ≥11 (n = 24)
Postoperative liver failure	0 (0%)	2 (3.6%)	9 (37.5%)
Postoperative complications	6 (8.1%)	20 (35.7%)	20 (83.3%)
Refractory ascites	5 (6.8%)	15 (26.8%)	20 (83.3%)
Jaundice	2 (2.7%)	10 (17.9%)	19 (79.2%)
Alteration of coagulation factors	3 (4.1%)	12 (21.4%)	19 (79.2%)
Renal impairment	0 (0%)	4 (7.1%)	6 (25%)
Hospital stay (days)	8 (5-38)	9 (6-33)	25 (6-166)
1-year survival	100%	94%	74%

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Hospital stay (days)	8 (5-38)	9 (6-33)	25 (6-166)
1-year survival	100%	94%	74%

High risk of liver resection in cirrhotic patients with MELD Score > 10

# Portal Hypertension and the Outcome of Surgery for Hepatocellular Carcinoma in Compensated Cirrhosis: A Systematic Review and Meta-analysis

HEPATOLOGY 2015;61:526-536

Annalisa Berzigotti,<sup>1,2\*</sup> Maria Reig,<sup>1,3\*</sup> Juan G. Abraldes,<sup>1,2</sup> Jaime Bosch,<sup>1,2\*\*</sup> and Jordi Bruix<sup>1,3\*\*</sup>

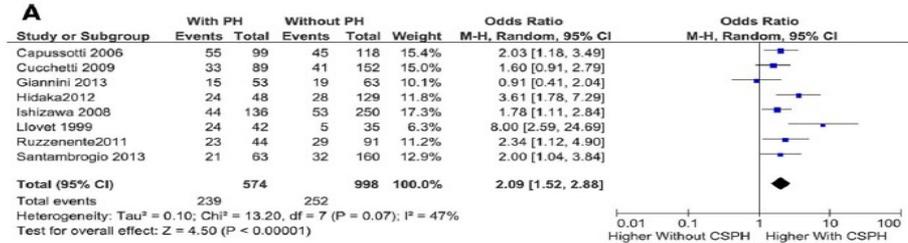
## Clinically Significant PHT

- HPVG  $\geq$  10mmHg

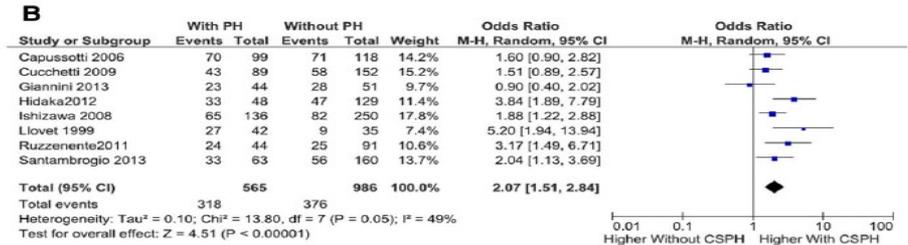
or

- Surrogate criteria

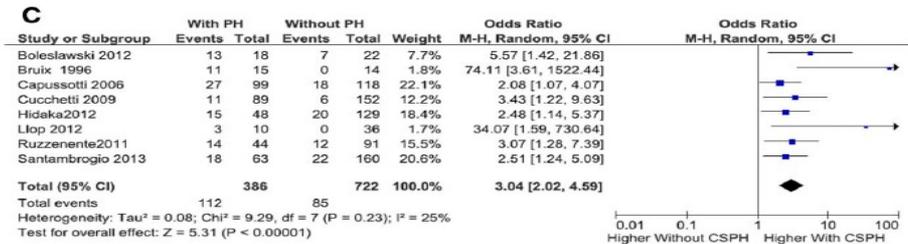
- Esophageal varices
- Platelets < 100,000/mL
- Spleen diameter > 12cm



3y surv



5y surv



Decomp

Fig. 2. Impact of CSPH on postoperative outcomes of patients with HCC and compensated cirrhosis in all the included studies. (A) Three-year mortality. (B) Five-year mortality. (C) Clinical decompensation.

# Impact of Clinically Evident Portal Hypertension on the Course of Hepatocellular Carcinoma in Patients Listed for Liver Transplantation

HEPATOLOGY, July 2015

François Faitot,<sup>1</sup> Marc-Antoine Allard,<sup>1</sup> Gabriella Pittau,<sup>1</sup> Oriana Ciacio,<sup>1</sup> René Adam,<sup>1,3,4</sup> Denis Castaing,<sup>1,2,3</sup>  
Antonio Sa Cunha,<sup>1,2,3</sup> Gilles Pelletier,<sup>1,2,3</sup> Daniel Cherqui,<sup>1,2,3</sup> Didier Samuel,<sup>1,2,3</sup> and Eric Vibert<sup>1,2,3</sup>

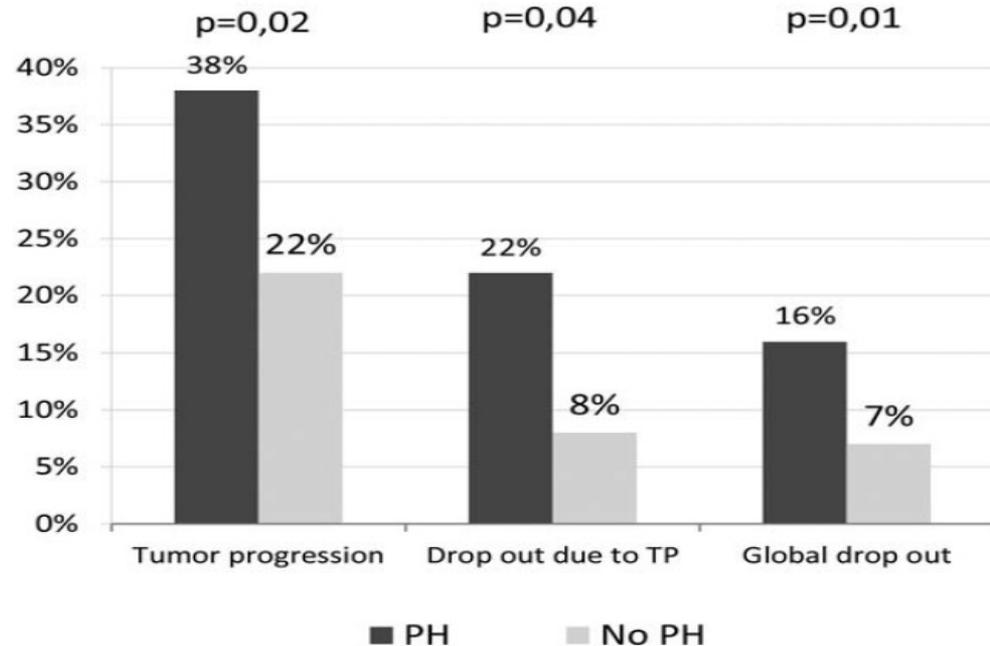
- GEV

Or

- Ascites

Or

- Plt<100.000 + Splenomegaly



# Multidisciplinary Tumor Board

## ❑ Resection

- Pro: Single nodule, MELD < 9
- Con: Portal HTN (according to BCLC)

## ❑ Ablation

- Pro: Single nodule
- Con: Size > 2 cm (according to BCLC)

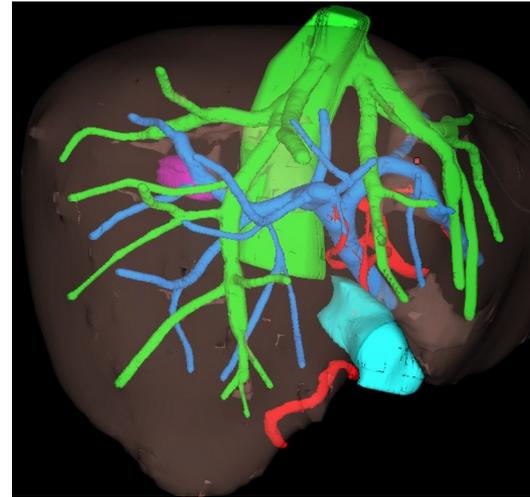
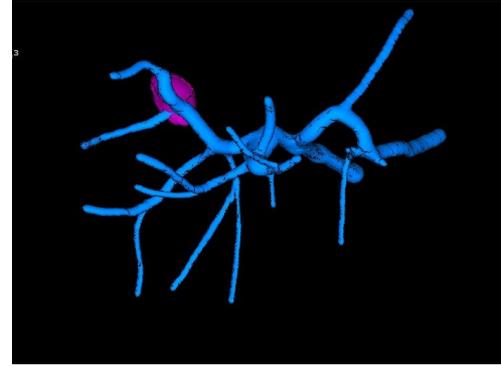
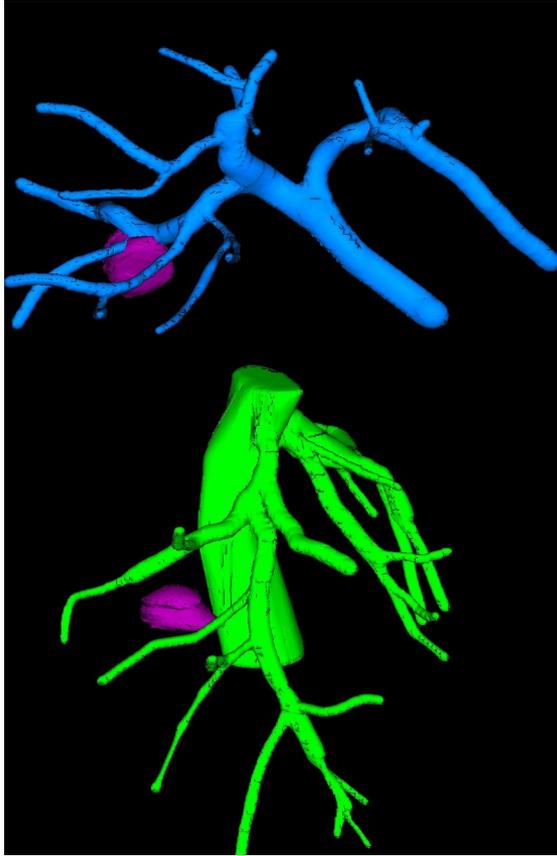
## ❑ Transplantation PS 0

- Pro: Milan criteria + , AFP score 0, Portal HTN
- Con: Blood type 0: waiting time 12 months

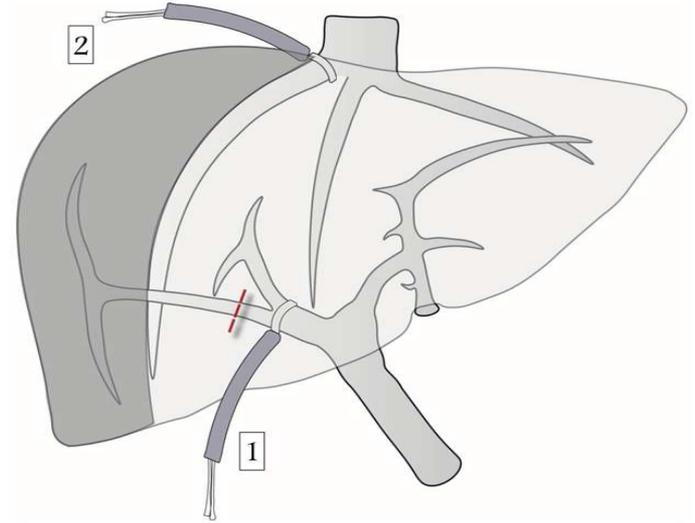
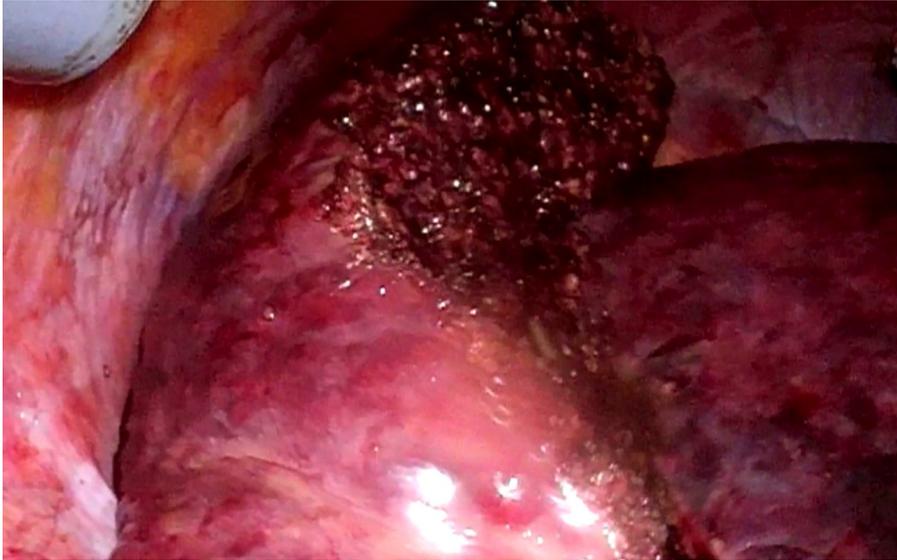
# Multidisciplinary Tumor Board

- ❑ Transplantation
- ❑ Resection
- ❑ Ablation
  
- ❑ **Decision**
  - Listing for transplantation
  - Resection

# 3D reconstruction



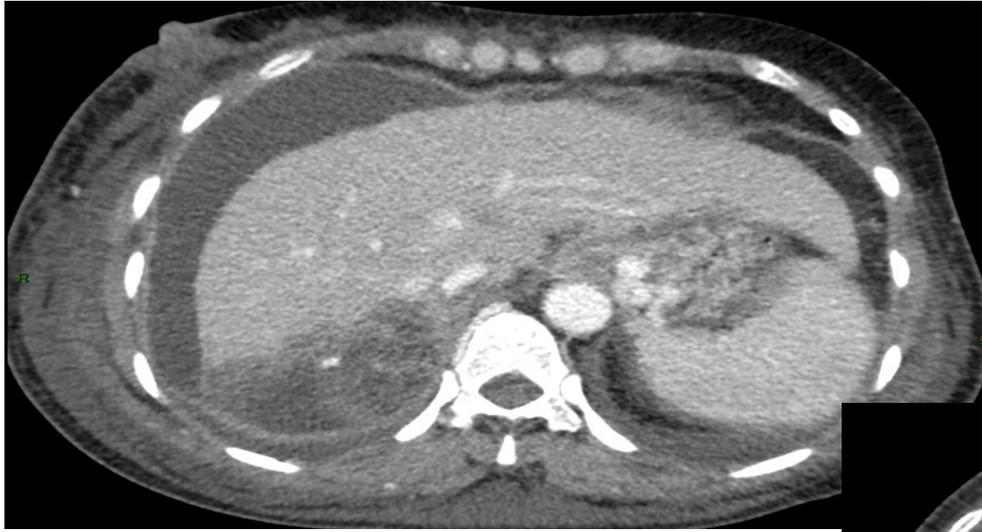
# Laparoscopic Posterior Sectionectomy



# Path report

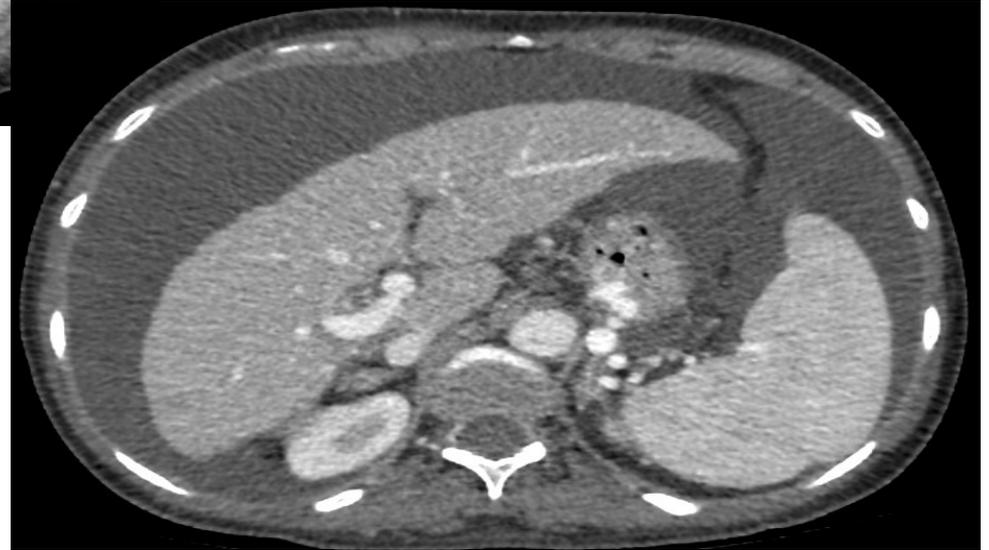


- Well differentiated HCC Edmondson grade 2
- No microscopic vascular invasion
- Margin 1 mm
- Metavir A2 F4



Ascitic decompression

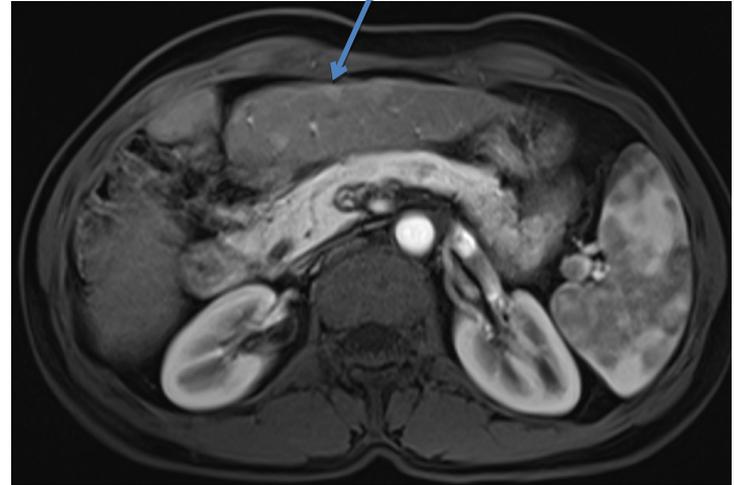
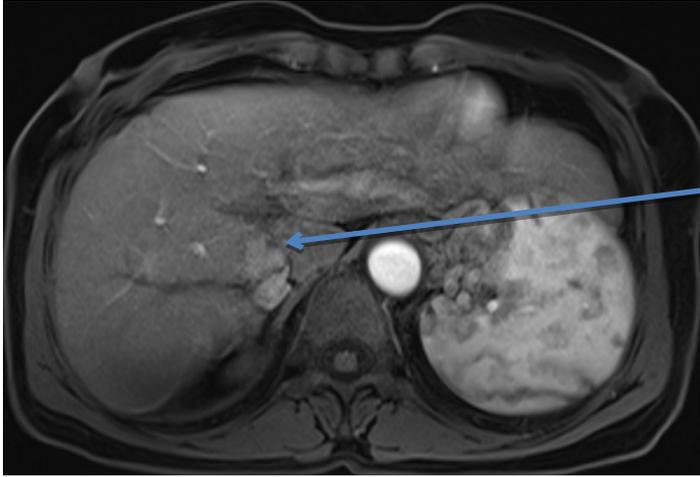
CT one month after surgery



3 months after surgery  
Recompensated  
Bilirubin 15 – INR 1.15  
MELD 8

Treatment of HCV





Quadrifocal recurrence at 1 year

Largest 25 mm

AFP 40

# Treatment options

- ❑ Repeat resection
- ❑ Ablation
- ❑ Systemic treatment
- ❑ Liver transplantation

# Multidisciplinary Tumor Board

- ❑ Repeat resection
- ❑ Ablation
- ❑ TACE
- ❑ Systemic treatment
- ❑ **Liver transplantation**
  - Best option
  - AFP score 2
  - Neoadjuvant treatment: TACE

# Path report

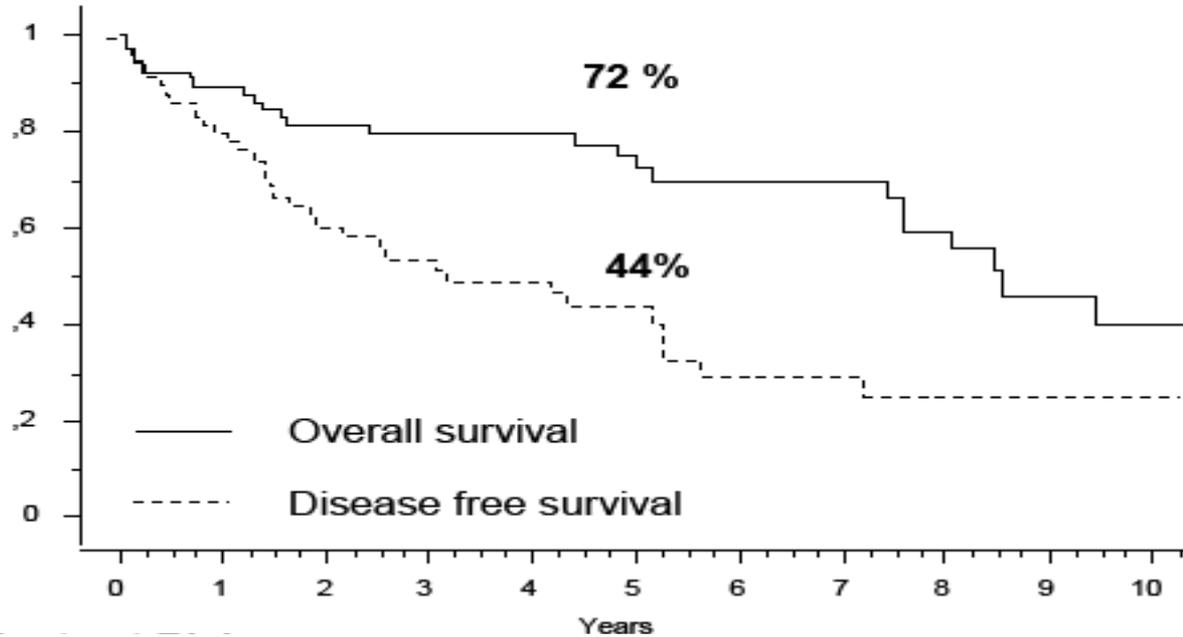
- 4 nodules 9 -24 mm
- Largest with microvascular invasion

# Liver Resection for Transplantable Hepatocellular Carcinoma

## Long-Term Survival and Role of Secondary Liver Transplantation

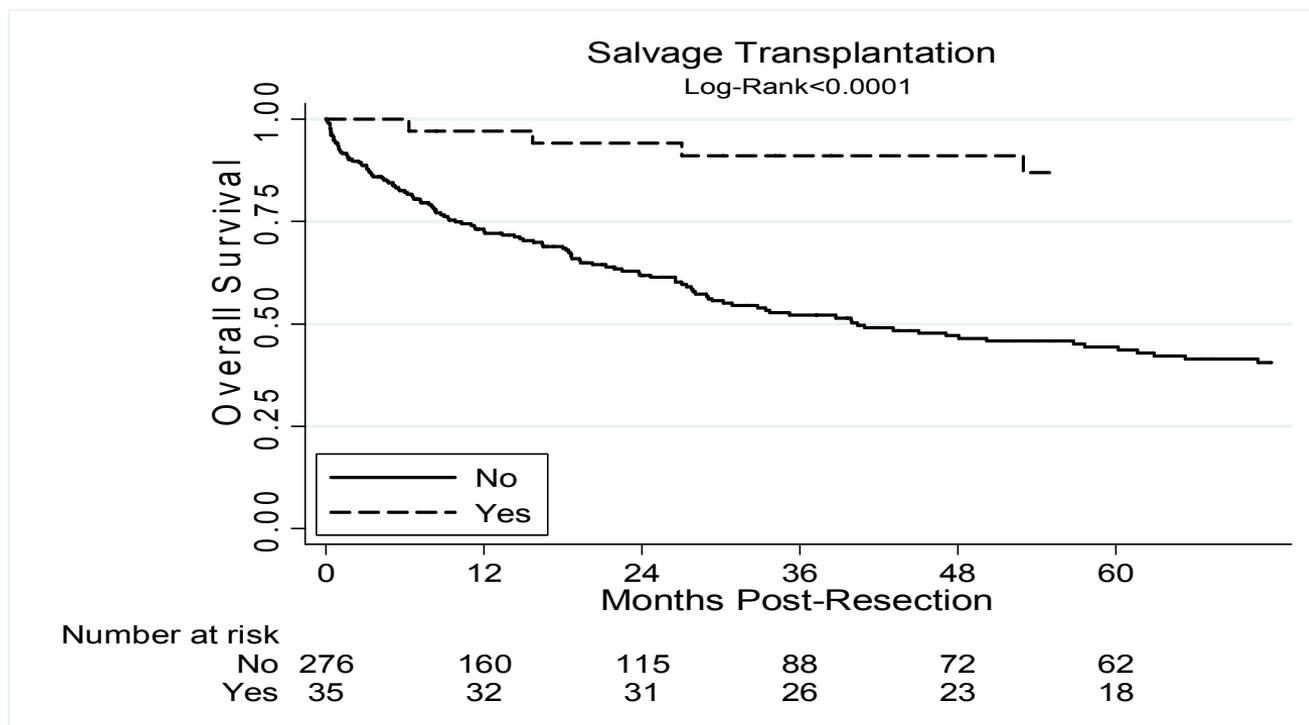
Daniel Cherqui, MD,\* Alexis Laurent, MD, PhD,\* Nicolas Mocellin, MD,\* Claude Tayar, MD,\*  
Alain Luciani, MD, PhD,† Jeanne Tran Van Nhieu, MD,‡ Thomas Decaens, MD, PhD,§  
Monika Hurtova, MD,§ Riccardo Memeo, MD,\* Ariane Mallat, MD, PhD,§ and Christophe Duvoux, MD§

*Annals of Surgery* • Volume 250, Number 5, November 2009

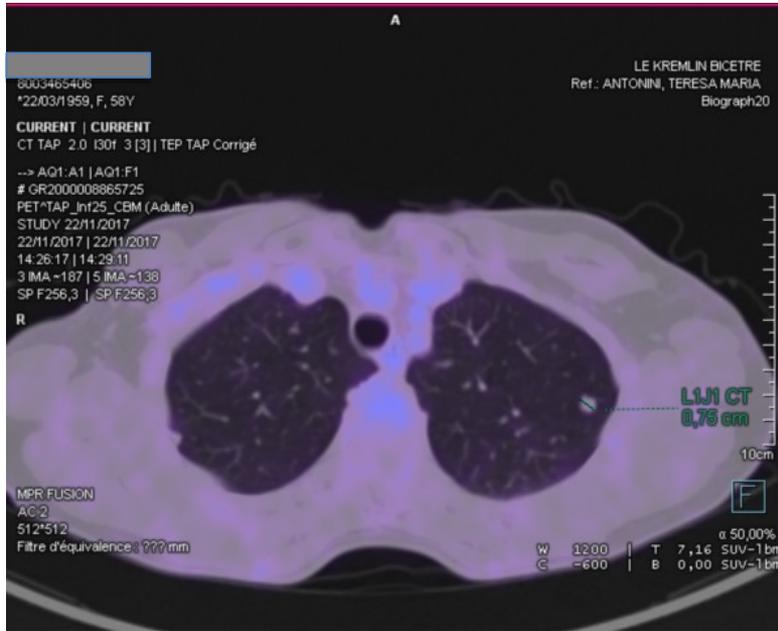


# Liver resection for hepatocellular carcinoma in 313 Western patients: Tumor biology and underlying liver rather than tumor size drive prognosis

Michael D. Kluger<sup>1,5</sup>, Juan A. Salceda<sup>1</sup>, Alexis Laurent<sup>1</sup>, Claude Tayar<sup>1</sup>, Christophe Duvoux<sup>2</sup>, Thomas Decaens<sup>2</sup>, Alain Luciani<sup>3</sup>, Jeanne Tran Van Nhieu<sup>4</sup>, Daniel Azoulay<sup>1</sup>, Daniel Cherqui<sup>1,6,\*</sup>







Mild AFP increase at 1 year

Lung mets

Treatment: Switch to Everolimus + Sorafenib (Regorafenib)

Alive with disease 4 y after Rx and 3 y after Tx