

# HEPATIC ELASTOMETRY AND RISK OF RECURRENCE AFTER HCC RESECTION

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## INTRODUCTION

- Liver transplantation (LT) is the ideal treatment for hepatocellular carcinoma (HCC).
- Liver resection (LR) is a curative treatment for HCC in selected patients in the context of organ shortage.
- The recurrence rate remains high (almost 2/3 of patients recur at 5 years).

## AIM

- To establish a preoperative score predictive of recurrence after LR to improve the decision-making process between LR and LT.

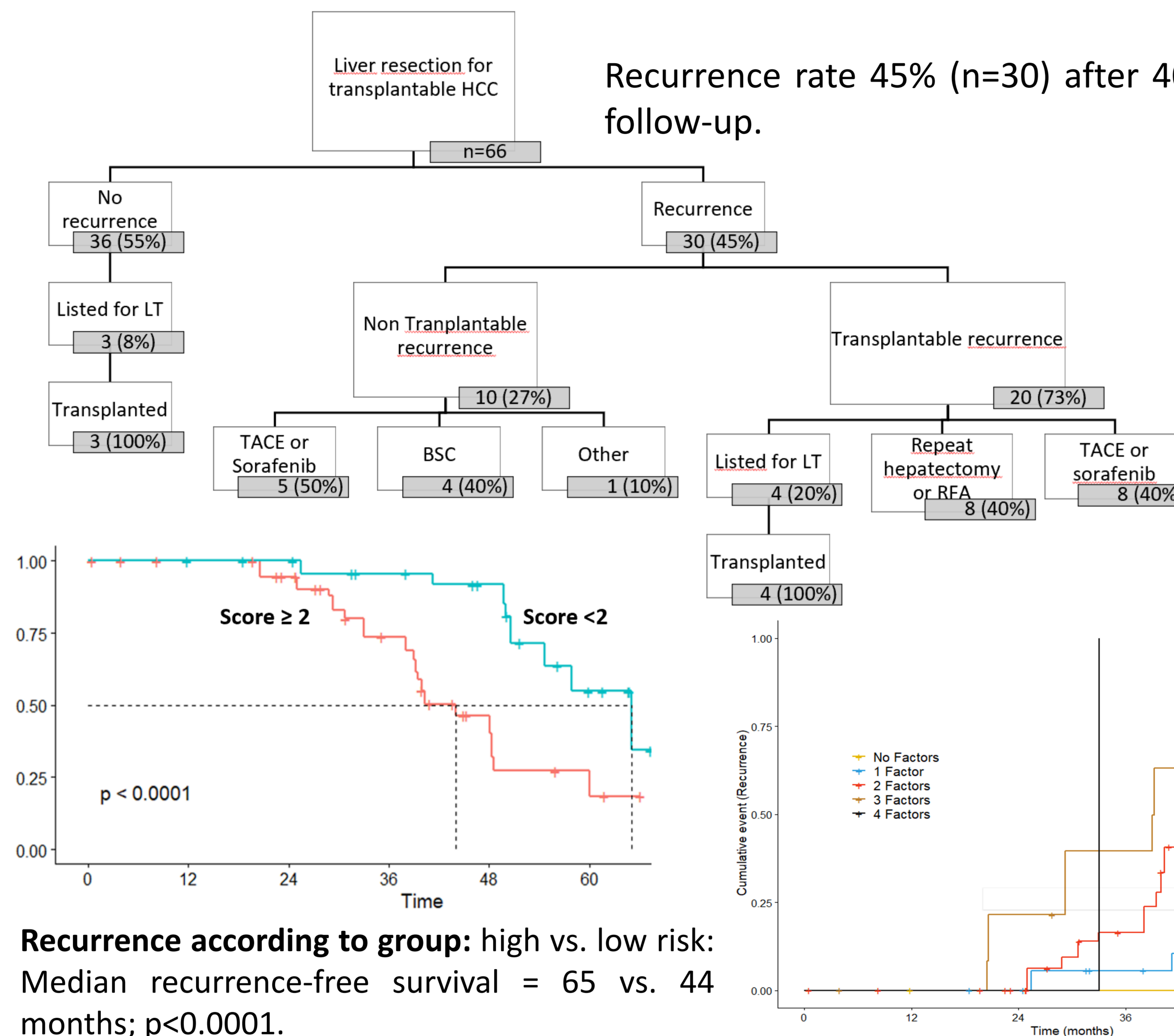
## METHOD

- Single-centre retrospective study from Jan 2015 to Dec 2018 from prospective database
- Inclusion criteria:
  - LR for HCC with AFP score  $\leq 2$ <sup>1</sup>
  - Preoperative percutaneous elastometry measurement with FibroScan Touch502 probe (Echosens, Paris, France)
- Post-operative follow-up: every 3-4 months, including liver tests, AFP, CT or MRI.
- Recurrence: defined as appearance of a typical HCC lesion on imaging, validated in multidisciplinary tumor board.
- Recurrence score: univariate Cox regression and multivariate analysis with combination plot, selection of optimal thresholds (ROC curves), testing on a validation cohort using the Bootstrap method.

## RESULTS

Overall survival = 85% at 15.5 months.

Recurrence rate 45% (n=30) after 40 months of follow-up.



**Recurrence according to group:** high vs. low risk: Median recurrence-free survival = 65 vs. 44 months; p < 0.0001.

## Risk factors for recurrence after hepatectomy

Clinical characteristics	Univariate analysis			Multivariate analysis		
	HR	CI	p value	HR	CI	p value
Age	0.95	1.00-1.1	<b>0.02</b>	0.92	1.02-1.14	<b>0.003</b>
Body mass index (BMI)	0.93	0.99-1.15	<b>0.05</b>	0.94	0.94-1.19	0.33
Haemoglobin (g/dL)	1.28	0.61-0.98	<b>0.03</b>	0.88	0.65-1.18	0.40
INR	0.01	2.84-1224	<b>0.008</b>	0.01	2.42-1563	<b>0.01</b>
GGT (UI/L)	0.99	1.00-1.00	<b>0.006</b>	1.00	0.82-1.20	0.34
ALKP (UI/L)	0.99	1.00-1.00	<b>0.003</b>	1.00	0.99-1.00	0.24
Elastometry (kPa)	0.97	1.00-1.05	<b>0.03</b>	0.94	1.02-1.09	<b>&lt;0.01</b>
Diameter of nodules (mm)	0.60	1.16-2.32	<b>0.004</b>	0.43	1.57-3.29	<b>&lt;0.01</b>

HR indicates hazard ratio; CI, confidence interval; ASAT, Aspartate transaminase; ALAT, Alanine transaminase; GGT, Gamma-glutamyltransferase; ALKP, Alkaline phosphatase; INR, international normalized ratio; MELD, model for end-stage liver disease;

## Recurrence prediction score

	Age > 72	INR > 1.22	Elastometry > 11.2	Diameter nodule > 2.7	Total
Yes	1	1	1	1	4
No	0	0	0	0	0

**Recurrence according to the number of points**

## CONCLUSIONS

- Recent cohort from an expert centre.
- Recurrence rate comparable to literature.
- Elastometry in a population with HCC in the criteria of transplantation can predict the risk of recurrence.
- This work is part of the long-standing debate between LR and LT and could help in the therapeutic choice (LR vs. LT).
- Further work for validation on a larger prospective cohort.

## REFERENCES

<sup>1</sup> Duvoux C, Roudot-Thoraval F, Decaens T, Pessione F, Badran H, Piardi T, et al. Liver Transplantation for Hepatocellular Carcinoma: A Model Including  $\alpha$ -Fetoprotein Improves the Performance of Milan Criteria. *Gastroenterology*. 2012 Oct;143(4):986-994.e3.

## CONTACT INFORMATION

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