

**Supplemental information**

**Inevitability of disease recurrence after liver transplantation for NAFLD cirrhosis**

**François Villeret, Sébastien Dharancy, Domitille Erard, Armand Abergel, Louise Barbier, Camille Besch, Olivier Boillot, Karim Boudjema, Audrey Coilly, Filomena Conti, Christophe Corpechot, Christophe Duvoux, François Faitot, Stéphanie Faure, Claire Francoz, Emiliano Giostra, Jean Gugenheim, Jean Hardwigsen, Marie-Noëlle Hilleret, Jean-Baptiste Hiriart, Pauline Houssel-Debry, Nassim Kamar, Guillaume Lassailly, Marianne Latournerie, Georges-Philippe Pageaux, Didier Samuel, Claire Vanlemmens, Faouzi Saliba, and Jérôme Dumortier**

**Disease recurrence after liver transplantation for NAFLD cirrhosis is  
ineluctable**

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**Table S1. Distribution of components of MS before and after LT in patients with liver biopsy in follow-up (n=150).**

<b><u>Parameters</u></b>	<b><u>Before LT</u></b>		<b><u>After LT</u></b>	
	<b><u>Presence or not</u></b>	Number of patients	<b><u>Presence</u></b>	<b><u>Absence</u></b>
<b><u>Arterial hypertension</u></b>	Presence	122 (81.3%)	117	5
	Absence	28 (18.7%)	24	4
<b><u>Diabetes</u></b>	Presence	112 (74.7%)	100	12
	Absence	38 (25.3%)	11	27
<b><u>Obesity*</u></b>	Presence	86 (57.3%)	71	15
	Absence	64 (42.7%)	18	46
<b><u>Dyslipidemia or lipid drugs **</u></b>	Presence	28 (18.7%)	24	4
	Absence	122 (81.3%)	94	28
<b><u>Metabolic syndrome</u></b>	Presence	77 (51.3%)	69	8
	Absence	73 (48.7%)	58	15

*LDL-c: Low-Density Lipoproteins; LT: Liver Transplantation; TG: triglycerides.*

*\*: Defined by a BMI greater than 30kg/m<sup>2</sup>*

*\*\* : Defined by the presence of statin or fibrate therapy, or the presence of an increase in LDL-c > 2g/L or/and TG > 1.5G/L*

**Table S2. Distribution of disease recurrence according to the overall cohort and the protocol centers.**

	<u>All patients</u>				<u>Centers with biopsy protocol</u>			
	Number of patients	Steatosis ≥ grade 2	NASH	Fibrosis stage ≥F2	Number of patients	Steatosis ≥ grade 2	NASH	Fibrosis stage ≥F2
1 year after LT	126	22 (17.5%)	13 (10.3%)	20 (15.9%)	103	20 (19.4%)	9 (8.7%)	18 (17.4%)
3 years after LT	43	17 (39.5%)	13 (30.2%)	15 (34.9%)	31	13 (41.9%)	10 (32.3%)	14 (45.2%)
5 years after LT	36	16 (44.4%)	14 (38.9%)	17 (47.2%)	25	11 (44.0%)	9 (36.0%)	12 (48.0%)
10 years after LT	17	9 (52.9%)	8 (47.1%)	11 (64.7%)	12	6 (50.0%)	5 (41.7%)	9 (75.0%)

*LT: Liver Transplantation; NASH: Non-Alcoholic Steatohepatitis*

**Table S3. Recurrence of Initial Graft Disease after Liver Transplantation for NAFLD Cirrhosis (Major studies with liver histological evaluation).**

Studies	Follow-up after LT (years)	Steatosis recurrence on liver biopsies	NASH recurrence on liver biopsies	Advances fibrosis on liver biopsies	Risk factors for NAFLD recurrence		Risk factors for NASH recurrence		Risk factors for advanced fibrosis recurrence	
					Univariate analysis	Multivariate analysis	Univariate analysis	Multivariate analysis	Univariate analysis	Multivariate analysis
Bhagat <i>and al.</i> (2009) <sup>1</sup>	0.5	21/64 (32.8%)*		0/64 (0%)	-	-	-	-	-	-
Yalamanchili <i>and al.</i> (2010) <sup>2</sup>	1 5 10	3/18 (18%) 8/18 (44%)	0/18 (0%) 1/18 (6%) 3/18 (16%)	0/18 1/18 (5.5%) 2/18 (11.1%)	-	-	-	-	-	-
Dureja <i>and al.</i> (2011) <sup>3</sup>	0.9	34/88 (38.6%)	9/88 (10.2%)	3/88 (3.4%)	BMI pre-LT BMI post-LT Corticoids Post-LT triglycerides Post-LT Diabetes Arterial hypertension	BMI pre-LT (OR: 1.15) BMI post-LT (OR: 1.22) Post-LT triglycerides (OR: 1.01)	-	-	-	-
Malik <i>and al.</i> (2009) <sup>4</sup>	1.2	55/79 (69.6%)	19/79 (24.1%)	7/79 (7.6%)	-	-	-	-	-	-
Vallin <i>and al.</i> (2014) <sup>5</sup>	1 5	11/11 (100%) 7/7 (100%)	9/11 (81.8%) 5/7 (71.4%)	2/11 (18.2%) 5/7 (71.4%)	-	-	-	-	-	-
Sourianarayanan <i>and al.</i> (2017) <sup>6</sup>	1 3 5	7/44 (16%)* 4/18 (22%)* 6/17 (35%)*	3/44 (6.8%) 4/18 (22.2%) 5/17 (29.4%)	1/44 (2.3%) 0/18 (0%) 1/17 (5.9%)	-	-	-	-	-	-
Bhati <i>and al.</i> (2017) <sup>7</sup>	3.9	30/34 (88.2%)	14/34(41.2%)	7/34 (20.6%)	Post-LT Diabetes Post-LT triglycerides	-	Post-LT Diabetes Post-LT triglycerides	-	-	-
Villeret <i>and al.</i> (2022)	1 5	81/150 (62.0%)** 104/150 (85.0%)**	10/150 (10.4%)** 34/150 (60.3%)**	0/150 (0.0%)** 10/150 (20.0%)**	BMI at LT Pre-LT MS Donors Age > 60Y BMI at 1 year post LT Post-LT Hb1Ac > 8% lipid drugs	BMI pre-LT (OR: 2.7)	Age at LT BMI pre-LT BMI at 1 year Post-LT HDLc < 1.15mmol/L Steatosis recurrence at 1 year	Age < 65y at LT (OR:4.214 ) Post-LT HDLc < 1.15mmol/L (OR : 3.463 ) Grade 2 Steatosis recurrence at 1 year (OR :10.196)	Age at LT BMI pre-LT Pre-LT MS No HCC at LT BMI at 1 year Long term CYA Grade 2 steatosis recurrence at 1 year	Pre-LT MS (OR : 8.6) Long term CYA (OR: 11.4) Grade 2 steatosis recurrence at 1 year (OR : 10.7)

\* Steatosis between 34-66%.

\*\* Cumulative incidence rate

*BMI: Body Mass Index; CYA: cyclosporine A; HCC: Hepatocellular Carcinoma; HDL-c: High-Density Lipoproteins Cholesterol; LDL-c: Low-Density Lipoproteins; LT: Liver Transplantation; MS: Metabolic Syndrome; OR: Odds ratio.*

## Supplementary references

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