***Supplementary Table 1** Details about the statistical analyses.*

Benchmark cutoffs

Due to the high variability in the number of benchmark cases among centers, we modified the methodology considering Benchmark cutoffs from the 75th percentile up to the 25th percentile of the median value of each participating center.

75th percentile for values indicating worse outcomes.

25th percentile for indicators of good outcome.

Comparison of patient groups

Categorical variables were compared using the Fischer's exact or the Pearson's chi-squared test, where appropriate. The Student *t* test and Mann-Whitney U test were used to make pairwise comparisons.

Time-to-event endpoints were visualized with Kaplan-Meier plots. Overall survival and disease-free survival were calculated as the time from LT to death and to the first evidence of recurrence, respectively.

Pearson correlation was performed to compute correlation coefficients between measured variables.

Propensity score matching was performed in order to balance clinical variables between transplanted and resected patients using the following variables: Patient's age, sex, T-stage, tumor size and presence of PSC.

All tests were two-sided, and $p < 0.05$ was considered statistically significant.

Benchmark cutoffs

Supplementary Table 2 *Patient Characteristics*

Basic Patient Characteristics	BM-cutoffs (75th percentile)	BM-cohort n=120	Control groups	
			High-risk cohort n=14	LT-only cohort n=27
Age (years), median (IQR)	-	51 (40.75 – 61.25)	64 (55.75 – 69)	51.5 (35.75 – 60)
Male gender, %	-	70.0%	71.4%	76.9%
BMI (kg/m^2), median (IQR)	-	23.4 (21.2 – 25.9)	26.2 (22.5 – 26.5)	23.4 (21.4 – 26.4)
Primary sclerosing cholangitis (PSC), %	-	55.8%	7.1%	53.8%
Bismuth-Corlette Classification, %	-			
Type I/B1 and II/B2	-	4.8%	33.3%	10.5%
Type IIIa/B3-R	-	22.0%	0.0%	10.5%
Type IIIb/B3-L	-	17.1%	33.3%	15.8%
Type IV/B4	-	56.1%	33.3%	63.2%
Preoperative Procedures				
Lab-MELD, median (IQR)	-	10 (7 – 18)	15 (7.75 – 25)	9 (7 – 18.4)
Time from diagnosis to LT (months), median (IQR)	-	10 (8 – 15)	10 (8 – 12)	3 (0 – 5)
Patients with weight loss, %	-	22.6%	37.5%	NA
Median lost kg, median (IQR)	-	8.5 (5.5 – 14)	13 (5 – NA)	NA
Preoperative Cholangitis, %	-	45.8%	50.0%	46.2%
Neoadjuvant therapy, %				
No neoadjuvant chemoradiation	-	0.0%	0.0%	100.0%
Mayo protocol	-	88.1%	66.7%	0.0%
Modified Mayo protocol	-	11.9%	33.3%	0.0%
Surgical Characteristics				
Donor characteristics, %				
Donor after Brain Death (DBD	-	61.3%	60.0%	76.9%
Donor after Circulatory Death (DCD)	-	0.9%	10.0%	23.1%
Extended Criteria Donor (ECD)	-	8.1%	30.0%	0.0%
Living Donor	-	29.7%	0.0%	0.0%
Transplantation technique, %				
Classic technique (with cava replacement)	-	20.8%	20.0%	15.4%
Piggyback technique	-	70.8%	80.0%	84.6%
Living donor	-	8.3%	0.0%	0.0%
Bloodloss (ml), median (IQR)	-	700 (425 – 1025)	850 (500 – 1000)	1500 (1000 – 2300)
Intraoperative blood transfusion, %	-	47.9%	90.0%	26.9%
Duration of surgery (min), median (IQR)	≤ 540 min	391 (309.25 – 490.25)	336 (302 – 443.5)	409 (330 – 540)
Lymph nodes retrieved, median (IQR)	-	3 (2 – 5)	4 (1 – 4.5)	7 (3 – 11)
Freshfrozen section, %	-	77.1%	70.0%	57.7%

Postoperative course				
ICU stay (days), median (IQR)	**≤ 4 d**	1.4 (1 – 3.75)	1.5 (1 – 4.25)	4 (2 – 5)
Length of Stay (days), median (IQR)	**≤ 18 d**	7 (6 – 13)	10.5 (5.75 – 14)	15.5 (14 – 25.75)
Oncological parameters				
Final R0 surgical margin status, %	**≥ 80.0%**	93.6%	81.8%	81.0%
Pathologic response to radiochemotherapy, %				
Complete / Near-complete response	-	53.8%	0.0%	-
Marked response	-	7.7%	22.2%	-
Moderate response	-	15.4%	33.3%	-
Minimal response / None	-	23.1%	44.4%	-
Transplantation specific				
Postoperative immunosuppression, %				
Corticosteroids and Calcineurin inhibitors	-	12.5%	10.0%	0.0%
+ Mycophenolate mofetil	-	87.5%	80.0%	42.3%
+ IL-2 receptor antibodies	-	0.0%	10.0%	57.7%
Complications				
CCI®, median (IQR)	**≤ 33.7**	33.5 (20.9 – 49.9)	46.0 (5.2 – 90.0)	33.7 (0 – NA)
Any complication, %	**≤ 79.8%**	77.8%	78.6%	53.8%
≥ Clavien-Dindo 3a, %	**≤ 66.7%**	63.0%	64.3%	53.8%
More than one complication, %	**-**	54.1%	41.7%	50.0%
Re-Laparotomy, %	**≤ 39.3%**	24.1%	45.5%	26.9%
Readmission, %	**≤ 67%**	52.0%	60.0%	38.5%
Time to readmission in days, median (IQR)	-	50 (18.5 – 145.5)	70 (37.75 – 146.25)	38.5 (34.75 – 158.75)

Supplementary Figure 1: *Flowchart of the selection of the benchmark cohort*