

**Supplementary Table 1 Baseline analysis of routine laboratory parameters and Child-Pugh and model for end-stage liver disease scores**

Characteristics	BL	3D	1M	3M	6M	12M	F	P value
ALT in IU/L	19 (16, 27)	31 (17, 34) <sup>a</sup>	26 (19, 27)	25 (22, 26)	26 (23, 31)	30 (20, 36) <sup>a</sup>	8.196	< 0.001
AST in IU/L	29 (22, 35)	43 (24, 46) <sup>a</sup>	50 (33, 58) <sup>a,c,d</sup>	37 (32, 42) <sup>a</sup>	33 (33, 38) <sup>c</sup>	40 (25, 46) <sup>a,d</sup>	13.907	< 0.001
ALB in g/L	32.28 ± 4.46	32.20 (30.10, 34.00)	29.53 (28.97, 33.30)	30.06 (29.20, 33.85)	31.00 (29.35, 33.80)	32.38 ± 4.52	2.688	0.060
TBIL in μmol/L	30.3 (18.2, 43.9)	38.6 (23.8, 44.4)	39.9 (22.1, 41.3) <sup>c</sup>	56.0 (24.2, 82.7) <sup>a,b</sup>	37.2 (33.0, 41.8) <sup>c</sup>	28.2 (21.9, 44.3) <sup>c</sup>	14.014	< 0.001
CR in μmol/L	67.18 ± 16.20	58.89 (53.25, 63.53)	47.46 (47.16, 53.73) <sup>a,b,e</sup>	48.80 (48.80, 48.80) <sup>a,b</sup>	56.58 (53.85, 62.68) <sup>a,c</sup>	44.47 (40.08, 48.58) <sup>a,b,c,d</sup>	37.704	< 0.001
PLT as 10 <sup>9</sup> /L	68.5 (44.5, 114.8)	69.5 (44.5, 113.8)	73.5 (47.8, 109.0) <sup>e</sup>	89.8 ± 47.9 <sup>d,e</sup>	91.8 ± 49.5	96.1 ± 50.4 <sup>a,b,d</sup>	11.285	0.001
INR	1.36 (1.23, 1.52)	1.45 (1.36, 1.51) <sup>a</sup>	1.43 (1.28, 1.56) <sup>e</sup>	1.44 ± 0.23 <sup>d,e</sup>	1.49 (1.35, 1.60) <sup>a,c</sup>	1.32 (1.16, 1.43) <sup>b,c,d</sup>	8.465	< 0.001
Child-Pugh score	7.5 (6.0, 8.3)	8.0 (7.0, 9.0) <sup>a</sup>	7.0 (7.0, 8.0) <sup>b,c,e</sup>	8.0 (7.0, 8.0) <sup>b,d,e</sup>	7.0 (6.0, 7.0) <sup>b</sup>	6.5 (6.0, 7.0) <sup>a,b</sup>	24.402	< 0.001

MELD score	10.60 ± 4.13	11.82 14.13) <sup>a</sup>	(9.85, 11.93 ± 3.35 <sup>a,c,e</sup>	14.33 15.49) <sup>a,b,d,e</sup>	(10.75, 13.44 14.30) <sup>a</sup>	(9.79, 10.38 ± 4.56 <sup>b,d</sup>	19.038 <	0.001
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Values shown are mean ± SD or median with interquartile range for continuous data. <sup>a</sup>*P* < 0.05 *vs* analysis of variance for baseline; <sup>b</sup>*P* < 0.05 *vs* postoperative day 3; <sup>c</sup>*P* < 0.05 *vs* 3 mo postoperatively; <sup>d</sup>*P* < 0.05 *vs* 6 mo postoperatively; <sup>e</sup>*P* < 0.05 *vs* 12 mo postoperatively. 3D: Postoperative day 3; 1M: One month postoperatively; 3M: Three months postoperatively; 6M: Six months postoperatively; 12M: Twelve months postoperatively; ALT: Alanine aminotransferase; AST: Aspartate aminotransferase; ALB: Albumin; BL: Baseline; CR: Creatinine; PLT: Platelets; INR: International normalized ratio; MELD: Model for end-stage liver disease; TBIL: Total bilirubin.

**Supplementary Table 2 Abdominal imaging measurement results**

Characteristics	BL	3D	1M	3M	6M	12M	F	P value
PVD in cm	1.28 (1.14, 1.42)	1.34 (1.17, 1.43) <sup>a</sup>	1.35 (1.18, 1.49) <sup>e</sup>	1.43 (1.23, 1.61) <sup>a,e</sup>	1.45 ± 0.42 <sup>a,b,e</sup>	1.24 (1.05, 1.37) <sup>b</sup>	12.04	< 0.001
PVV in cm/s	23.63 (18.89, 28.49) <sup>a</sup>	26.45 (23.30, 31.60) <sup>a</sup>	29.29 ± 10.17 <sup>a</sup>	29.37 ± 11.74 <sup>a</sup>	33.69 ± 12.37 <sup>a,b,c</sup>	28.61 (22.01, 32.77) <sup>a,d</sup>	10.72	< 0.001
LSTQ in kPa	17.73 (13.83, 20.58)	16.75 (13.42, 19.63)	16.24 (13.36, 21.68) <sup>d</sup>	18.55 (12.31, 25.06)	22.31 (13.91, 26.8) <sup>a,b,c</sup>	17.09 (13.53, 19.78) <sup>a,d</sup>	8.512	0.001
SSTQ in kPa	30.22 ± 10.38	29.20 ± 10.53	27.27 ± 12.59 <sup>c</sup>	19.87 (11.11, 25.59) <sup>a,b</sup>	24.75 ± 13.64 <sup>a,c</sup>	23.89 (14.16, 27.08) <sup>a,b,c</sup>	15.96	< 0.001
SL in cm	14.9 (12.0, 17.4)	14.4 (11.9, 17.8)	14.7 (11.8, 16.6) <sup>c,d</sup>	13.5 (11.8, 16.5)	13.3 ± 3.3 <sup>a</sup>	13.8 ± 3.0 <sup>a</sup>	7.058	< 0.001
SV in cm <sup>3</sup>	218.56 (119.75, 290.91)	210.55 (126.03, 281.01)	223.57 (142.90, 286.99)	160.83 (109.99, 283.69) <sup>a</sup>	185.15 (136.65, 275.43) <sup>c</sup>	210.67 (129.49, 303.58)	2.99	0.035

Values shown are mean ± SD with interquartile range for continuous data. <sup>a</sup>*P* < 0.05 *vs* analysis of variance for baseline; <sup>b</sup>*P* < 0.05 *vs* postoperative day 3; <sup>c</sup>*P* < 0.05 *vs* 3 mo postoperatively; <sup>d</sup>*P* < 0.05 *vs* 6 mo postoperatively; <sup>e</sup>*P* < 0.05 *vs* 12 mo postoperatively. 3D: Postoperative day 3; 1M: One month postoperatively; 3M: Three months postoperatively; 6M: Six months postoperatively; 12M: Twelve months postoperatively. BL: Baseline; LSTQ: Liver sound touch quantification; PPG: Portosystemic pressure gradient; PVD: Portal vein

inner diameter; PVV: Portal vein blood flow velocity; SL: Spleen length; SSTQ: Spleen sound touch quantification; SV: Spleen volume; TIPS: Transjugular intrahepatic portosystemic shunt.

**Supplementary Table 3 Baseline characteristics in patients with (recompensation group) and without recompensation (no recompensation group), *n* (%)**

<b>Variables</b>	<b>Recompensation group, <i>n</i> = 20</b>	<b>No recompensation group, <i>n</i> = 44</b>	<b><i>P</i> value</b>
Age in yr	51.8 ± 8.86	58.43 ± 13.89	0.055
Male sex	9 (45)	25 (57)	0.380
Etiology			
Viral	8 (40)	24 (55)	0.281
Alcohol	4 (20)	6 (14)	0.712
Other	8 (40)	14 (32)	0.523
PLT as 109/L	78.65 ± 48.64	71.5 (44.5, 128.75)	0.474
INR	1.37 (1.14, 1.59)	1.36 (1.24, 1.52)	0.384
ALT in IU/L	20.05 ± 5.85	20 (16.25, 27.75)	0.264
AST in IU/L	29 (20, 35.25)	29 (22, 34.75)	0.716
ALB in g/L	31.35 (28.68, 33.1)	32.38 ± 5.18	0.518
TBIL in μmol/L	26.93 ± 14.55	32.85 (18.48, 46.85)	0.080
PVV in cm/s	22.48 ± 5.87	24.15 ± 8.24	0.417
SL in cm	13.84 (11.9, 15.3)	15.01 ± 3.17	0.703
SV in cm <sup>3</sup>	196.44 (113.06, 273.52)	218.46 (133.93, 315.94)	0.840
MELD score	8.81 ± 3.85	11.41 ± 4.04	0.019

Child-Pugh score	6.5 (6, 8)	8 (6, 9)	0.174
PPG in mmHg			
Pre-TIPS	22.61 ± 6.06	26 (22, 28.75)	0.327
Post-TIPS	12.5 ± 5.37	14 (12.63, 18)	0.153
Post-TIPS PPG < 12 mmHg	12 (62)	7 (15)	0.006
PPG reduction by TIPS	10.11 ± 5.23	9.78 ± 4.89	0.896

Qualitative and quantitative differences between subgroups were analyzed by the chi-squared or Fisher's exact test for categorical variables, and the Student's t-test or Mann-Whitney U test for continuous variables, as appropriate. ALB: Albumin; ALT: Alanine aminotransferase; AST: Aspartate aminotransferase; INR: International standard ratio; MELD scores: Model for end-stage liver disease scores; PLT: Platelet; PPG: Portosystemic pressure gradient; PVV: Portal vein blood flow velocity; SL: Spleen length; SV: Spleen volume.

**Supplementary Table 4 Univariate and multivariable logistic regression to identify independent predictors of recompensation after transjugular intrahepatic portosystemic shunt**

Characteristics	Univariate analysis				Multivariate analysis			
	OR	Lower	Upper	<i>P</i> value	OR	Lower	Upper	<i>P</i> value
Age in yr	1.044	0.998	1.092	0.060	1.124	1.034	1.222	0.006
Male sex	1.608	0.555	4.660	0.381				
Etiology	1.714	0.526	5.585	0.371				
ALT in IU/L	1.043	0.969	1.122	0.268				
AST in IU/L	1.008	0.965	1.053	0.711				
ALB in g/L	1.038	0.928	1.162	0.512				
TBIL in $\mu\text{mol/L}$	1.031	0.996	1.067	0.088				
CR in $\mu\text{mol/L}$	1.015	0.981	1.051	0.395				
PLT as $10^9/\text{L}$	1.004	0.994	1.013	0.469				
INR	2.801	0.278	28.238	0.382				
Child-Pugh	1.264	0.901	1.773	0.175				
MELD	1.188	1.023	1.379	0.024				
PVD in cm	3.016	0.385	23.633	0.293				
PVV in $\text{cm/s}$	1.031	0.958	1.110	0.412				
LSTQ in kPa	1.000	0.927	1.078	0.996				
SSTQ in kPa	1.001	0.951	1.054	0.975				

SL in cm	1.032	0.881	1.207	0.698				
SV in cm <sup>3</sup>	1.000	0.997	1.004	0.837				
PPG in mmHg								
Pre-TIPS	1.122	0.984	1.280	0.086				
Post-TIPS	1.176	0.991	1.396	0.064				
Post-TIPS < 12 mmHg	0.121	0.028	0.520	0.005	0.119	0.024	0.584	0.009
PPG reduction by TIPS	1.040	0.934	1.157	0.473				

All parameters with a *P* value < 0.1 in the univariate analysis were included in the multivariable logistic regression. The baseline model for end-stage liver disease and post-transjugular intrahepatic portosystemic shunt portosystemic pressure gradient < 12mmHg were identified as independent predictors of recompensation. ALB: Albumin; ALT: Alanine aminotransferase; AST: Aspartate aminotransferase; CR: Creatinine; INR: International normalized ratio; LSTQ: Liver sound touch quantification; MELD: Model for end-stage liver disease; OR: Odds ratio; PLT: Platelets; PPG: Portosystemic pressure gradient; PVD: Portal vein inner diameter; PVV: Portal vein blood flow velocity; SL: Spleen length; SSTQ: Spleen sound touch quantification; SV: Spleen volume; TBIL: Total bilirubin; TIPS: Transjugular intrahepatic portosystemic shunt.



**Supplementary Table 5 Baseline characteristics of the subjects with or without new onset hepatic encephalopathy, *n* (%)**

Characteristics	Overall, <i>n</i> = 64	With new-onset HE <i>n</i> = 19	Without new-onset HE <i>n</i> = 45	<i>P</i> value
Age in yr	56 ± 13	64 ± 13	53 ± 11	0.002
Male sex	34 (53.1)	11 (57.9)	23 (51.1)	0.619
Etiology				
Viral	32 (50.0)	10 (52.6)	22 (48.9)	0.784
Alcohol	10 (15.6)	3 (15.8)	7 (15.6)	1.000
Other	22 (34.4)	6 (31.6)	16 (35.6)	0.760
ALT in IU/L	19 (16, 27)	19 (14, 27)	19 (16, 27)	0.638
AST in IU/L	29 (22, 35)	24 (21, 30)	29 (26, 36)	0.131
ALB in g/L	32.28 ± 4.46	32.73 ± 6.30	31.86 ± 4.01	0.584
TBIL in µmol/L	30.3 (18.2, 43.9)	29.2 (19.1, 47.3)	31.4 (17.6, 43.6)	0.927
CR in µmol/L	67.18 ± 16.20	66.96 ± 20.11	67.28 ± 14.51	0.951
PLT as 10 <sup>9</sup> /L	68.5 (44.5, 114.8)	68.0 (49.0, 122.0)	71.0 (43.5, 113.5)	0.525
INR	1.36 (1.23, 1.52)	1.36 (1.23, 1.45)	1.36 (1.22, 1.56)	0.468
Child-Pugh score	7.5 (6.0, 8.25)	8.0 (6.0, 9.0)	7.0 (6.0, 8.0)	0.372
MELD score	10.60 ± 4.13	10.09 ± 4.26	10.81 ± 4.10	0.527
PVD in cm	1.28 (1.14, 1.42)	1.17 (1.10, 1.34)	1.28 (1.14, 1.46)	0.669
PVV in cm/s	23.63 (18.89, 28.49)	22.54 (15.71, 26.94)	23.63 (19.52, 28.55)	0.434

LSTQ in kPa	17.73 (13.83, 20.58)	18.36 (13.36, 24.10)	17.30 (13.82, 19.16)	0.263
SSTQ in kPa	30.22 ± 10.38	29.37 ± 11.50	30.58 ± 9.99	0.674
SL in cm	14.9 (12.0, 17.4)	14.6 (11.6, 16.0)	14.9 (12.1, 17.5)	0.604
SV in cm <sup>3</sup>	218.46 (119.75, 290.91)	218.46 (123.81, 322.01)	218.46 (117.20, 289.37)	0.791
PPG in mmHg				
Pre-TIPS	25.5 (22.0, 28.3)	27.0 (25.5, 29.5)	23.0 (21.0, 26.3)	0.031
Post-TIPS	14.21 ± 4.59	15.23 ± 3.37	13.53 ± 5.50	0.310
Post-TIPS < 12 mmHg	15 (35.7)	3 (23.1)	12 (41.4)	0.426
PPG reduction by TIPS	9 (7, 14)	11 (8, 16)	8 (6, 13)	0.194

Qualitative and quantitative differences between subgroups were analysed by the chi-squared or Fisher's exact test for categorical variables, and the Student's *t*-test or Mann-Whitney U test for continuous variables, as appropriate. ALB: Albumin; ALT: Alanine aminotransferase; AST: Aspartate aminotransferase; CR: Creatinine; HE: Hepatic encephalopathy; INR: International normalized ratio; LSTQ: Liver sound touch quantification; MELD: Model for end-stage liver disease; PLT: Platelets; PPG: Portosystemic pressure gradient; PVD: Portal vein inner diameter; PVV: Portal vein blood flow velocity; SL: Spleen length; SSTQ: Spleen sound touch quantification; SV: Spleen volume; TBIL: Total bilirubin; TIPS: Transjugular intrahepatic portosystemic shunt.