

Table S1: Impact of HCC on posttransplant patient survival in three separate epochs of follow-up time adjusted for recipient characteristics only.

RECIPIENT		Hazard Ratio	Confidence Intervals	P value
HCC	0-90 days	0.76	0.53 – 1.09	0.14
	90 days – 2 years	1.99	1.48 – 2.66	<0.001
	2 years – 5 years	1.77	1.30 – 2.42	<0.001
Sex	Male	1		
	Female	0.86	0.72 – 1.03	0.10
Recipient ethnicity	White	1		
	Non-White	1.01	0.79 – 1.29	0.92
HCV status	Negative	1		
	Positive	1.38	1.13 – 1.69	0.002
Pretransplant in patient status	Outpatient	1		
	Inpatient	0.93	0.68 – 1.27	0.65
Ascites	Absence	1		
	Presence	1.10	0.92 – 1.33	0.30
Encephalopathy	Absence	1		
	Presence	1.03	0.85 – 1.25	0.77
Pretransplant renal support	No	1		
	Yes	0.90	0.61 – 1.34	0.60
Previous abdominal surgery	No	1		
	Yes	1.35	1.07 – 1.69	0.01
Varices	Absence	1		
	Presence	1.18	0.99 – 1.41	0.06
Life style activity	Normal	1		
	Restricted	1.22	0.85 – 1.76	0.28
	Self-care	1.26	0.87 – 1.81	0.22
	Reliant	1.71	1.09 – 2.68	0.02
	Confined	2.51	1.36 – 4.64	0.003
Age (years)	Linear	0.98	0.93 – 1.04	0.56
	Quadratic	1.00	0.99 – 1.00	0.20
BMI, Kg/m2	Linear	0.86	0.78 – 0.97	0.01
	Quadratic	1.00	1.00 – 1.00	0.01
UKELD	Linear	0.86	0.72 – 1.02	0.09
	Quadratic	1.00	0.99 - 1.00	0.1

Table S2: Impact of HCC on posttransplant patient survival in three separate epochs of follow-up time adjusted for recipient and donor characteristics.

RECIPIENT		Hazard Ratio	Confidence Intervals	P value
HCC	0-90 days	0.74	0.52 – 1.07	0.11
	90 days – 2 years	1.96	1.46 – 2.62	<0.001
	2 years – 5 years	1.74	1.27 – 2.31	<0.001
Sex	Male	1		
	Female	0.91	0.76 – 1.10	0.35
Recipient ethnicity	White	1		
	Non-White	1.3	0.80 – 1.31	0.84
HCV status	Negative	1		
	Positive	1.38	1.13 – 1.69	0.002
Pretransplant in patient status	Outpatient	1		
	Inpatient	0.94	0.68 – 1.28	0.68
Ascites	Absence	1		
	Presence	1.09	0.91 – 1.31	0.36
Encephalopathy	Absence	1		
	Presence	1.03	0.85 – 1.25	0.75
Pretransplant renal support	No	1		
	Yes	0.88	0.59 – 1.32	0.53
Previous abdominal surgery	No	1		
	Yes	1.36	1.08 – 1.71	0.008
Varices	Absence	1		
	Presence	1.17	0.98 – 1.40	0.08
Life style activity	Normal	1		
	Restricted	1.16	0.81 – 1.68	0.42
	Self-care	1.20	0.83 – 1.74	0.32
	Reliant	1.62	1.03 – 2.55	0.04
	Confined	2.55	1.33 – 4.72	0.003
Age (years)	Linear	0.98	0.93 – 1.03	0.44
	Quadratic	1.00	0.99 – 1.00	0.15
BMI, Kg/m2	Linear	0.86	0.76 – 0.96	0.007
	Quadratic	1.00	1.00 – 1.00	0.007
UKELD	Linear	0.87	0.73 – 1.03	0.11
	Quadratic	1.00	0.99-1.00	0.12
DONOR				
Sex	Male	1		
	Female	0.92	0.77 – 1.09	0.32
Cause of death	Trauma	1		
	CVA	0.92	0.68 – 1.25	0.59
	Others	0.93	0.68 – 1.28	0.65
Donor Type	DBD	1		
	DCD	1.21	0.99 – 1.48	0.07
ABO Match	Identical	1		
	Compatible	1.01	0.53 – 1.89	0.98
	Incompatible	5.25	1.26 – 21.9	0.02
Graft Type	Whole	1		
	Segmental	1.04	0.73 – 1.47	0.81
Organ appearance	Normal	1		
	Abnormal	1.34	1.09 – 1.65	0.06
Steatosis	Absence	1		
	Presence	0.88	0.73 – 1.06	0.18
Capsular damage	Absence	1		
	Presence	0.90	0.71 – 1.14	0.39
Donor age, years	Linear	1.02	0.99 – 1.05	0.13
	Quadratic	0.99	0.99 – 1.00	0.19
Donor BMI, kg/m²	Linear	1.11	0.98 – 1.26	0.01
	Quadratic	0.99	0.99 – 1.00	0.12
Cold Ischaemic Time (mins)	Linear	1.00	0.99 – 1.01	0.67
	Quadratic	0.99	0.99 – 1.01	0.08

Table S3: Impact of HCC on posttransplant graft survival in three separate epochs of follow-up time adjusted for recipient characteristics only.

RECIPIENT		Hazard Ratio	Confidence Intervals	P value
HCC	0-90 days	0.89	0.68 – 1.17	0.41
	90 days – 2 years	1.74	1.34 – 2.27	<0.001
	2 years – 5 years	1.72	1.28 – 2.31	<0.001
Sex	Male	1		
	Female	0.92	0.79 – 1.07	0.28
Recipient ethnicity	White	1		
	Non-White	0.99	0.81 – 1.22	0.93
HCV status	HCV negative	1		
	HCV positive	1.25	1.05 – 1.49	0.001
Pretransplant in patient status	Outpatient	1		
	Inpatient	0.95	0.73 – 1.23	0.69
Ascites	Absence	1		
	Presence	0.99	0.85 – 1.16	0.91
Encephalopathy	Absence	1		
	Presence	1.01	0.86 – 1.19	0.90
Pretransplant renal support	No	1		
	Yes	1.02	0.74 – 1.41	0.92
Previous abdominal surgery	No	1		
	Yes	1.29	1.06 – 1.57	0.01
Varices	Absence	1		
	Presence	1.10	0.95 – 1.28	0.20
Life style activity	Normal	1		
	Restricted	1.01	0.75 – 1.36	0.95
	Self-care	1.06	0.79 – 1.42	0.69
	Reliant	1.33	0.92 – 1.94	0.13
	Confined	2.07	1.24 – 3.47	0.006
Age (years)	Linear	0.97	0.93 – 1.01	0.17
	Quadratic	1.00	0.99 – 1.00	0.11
BMI, Kg/m2	Linear	0.92	0.83 – 1.02	0.10
	Quadratic	1.00	0.99 – 1.00	0.09
UKELD	Linear	0.95	0.81 – 1.12	0.54
	Quadratic	1.00	0.99 - 1.00	0.55

Table S4: Impact of HCC on posttransplant graft survival in three separate epochs of follow-up time adjusted for recipient and donor characteristics.

RECIPIENT		Hazard Ratio	Confidence Intervals	P value
HCC	0-90 days	0.84	0.65 – 1.11	0.22
	90 days – 2 years	1.67	1.28 – 2.17	<0.001
	2 years – 5 years	1.66	1.23 – 2.23	<0.001
Sex	Male	1		
	Female	0.93	0.80 – 1.09	0.39
Recipient ethnicity	White	1		
	Non-White	0.98	0.80 – 1.21	0.85
HCV status	HCV negative	1		
	HCV positive	1.26	1.05 – 1.50	0.01
Pretransplant in patient status	Outpatient	1		
	Inpatient	0.94	0.72 – 1.23	0.68
Ascites	Absence	1		
	Presence	0.97	0.83 – 1.13	0.68
Encephalopathy	Absence	1		
	Presence	1.01	0.86 – 1.19	0.90
Pretransplant renal support	No	1		
	Yes	1.00	0.72 – 1.38	0.98
Previous abdominal surgery	No	1		
	Yes	1.36	1.12 – 1.65	0.002
Varices	Absence	1		
	Presence	1.09	0.94 – 1.27	0.27
Life style activity	Normal	1		
	Restricted	0.93	0.69 – 1.25	0.63
	Self-care	1.01	0.75 – 1.36	0.95
	Reliant	1.29	0.89 – 1.88	0.18
	Confined	2.11	1.26 – 3.54	0.005
Age (years)	Linear	0.96	0.93 – 1.00	0.07
	Quadratic	1.00	0.99 – 1.00	0.05
BMI, Kg/m²	Linear	0.91	0.82 – 1.01	0.07
	Quadratic	1.00	0.99 – 1.00	0.06
UKELD	Linear	0.95	0.81 – 1.11	0.53
	Quadratic	1.00	0.99 – 1.00	0.53
DONOR				
Sex	Male	1		
	Female	0.96	0.83 – 1.11	0.56
Cause of death	Trauma	1		
	CVA	0.90	0.69 – 1.16	0.41
	Others	0.88	0.67 – 1.15	0.36
Donor Type	DBD	1		
	DCD	1.66	1.41 – 1.97	<0.001
ABO Match	Identical	1		
	Compatible	0.98	0.57 – 1.67	0.93
	Incompatible	2.92	0.71 – 12.0	0.14
Graft Type	Whole	1		
	Segmental	1.22	0.92 – 1.63	0.17
Organ appearance	Normal	1		
	Abnormal	1.39	1.17 – 1.66	<0.01
Steatosis	Absence	1		
	Presence	0.85	0.73 – 0.99	0.04
Capsular damage	Absence	1		
	Presence	0.96	0.79 – 1.16	0.65
Donor age, years	Linear	1.02	0.99 – 1.04	0.17
	Quadratic	0.99	0.99 – 1.00	0.41
Donor BMI, kg/m²	Linear	0.91	0.82 – 1.01	0.07
	Quadratic	1.00	0.99 – 1.00	0.06
Cold Ischaemic Time (mins)	Linear	1.00	0.99 – 1.00	0.22
	Quadratic	0.99	0.99 – 1.00	0.47

Table S5: Impact of HCC on posttransplant patient survival in four separate epochs of follow-up time (n=4 927).

Posttransplant patient survival	HCC compared to non-HCC Hazard ratio (95% CI)				P value time dependency* ²
	0 to 3 months	3 to 12 months	12 to 24 months	24 to 60 months	
Unadjusted analysis	0.88 (0.63-1.23)	2.43 (1.75-3.39)	2.01 (1.31-3.10)	2.00 (1.50-2.66)	<0.001
Adjusted for recipient characteristics*¹	0.76 (0.53-1.09)	2.13 (1.49-3.05)	1.77 (1.13-2.77)	1.77 (1.30-2.42)	<0.001
Adjusted for recipient and donor characteristics*¹	0.74 (0.52-1.07)	2.10 (1.47-3.00)	1.74 (1.11-2.72)	1.74 (1.27-2.31)	<0.001

* Adjusted for a) Recipient characteristics: sex, ethnicity, HCV status, pretransplant inpatient status, ascites, encephalopathy, pretransplant renal support, pretransplant ventilation requirement, previous abdominal surgery, varices, lifestyle activity, age, BMI (Kg/M²), UKELD and b) Donor characteristics: sex, cause of death, donor type (donation after cardiac death or donation after brain death), ABO match, graft type, organ appearance, steatosis, capsular damage, age, BMI (Kg/m²), cold ischaemic time.

*² P-values represent whether HR's in each epoch of follow-up time differs significantly from each other.

* Tables S1 and S2 in the supplemental information have HRs and 95% CI for all other donor and recipient characteristics.

Table S6: Primary cause of death following liver transplantation for HCC and non-HCC patients in four separate epochs of follow-up time (n=620).

Cause of Death	0-90 days		91 days – 12 months		12 months – 24 months		24 months – 60 months	
	HCC (n=44)	Non-HCC (n=144)	HCC (n=66)	Non-HCC (n=80)	HCC (n=35)	Non-HCC (n=52)	HCC (n=77)	Non-HCC (n=122)
Recurrent primary disease - malignant* ¹	0.0% (0)	0.0% (0)	16.7% (11)	0.0% (0)	34.3% (12)	3.9% (2)	15.6% (12)	1.6% (2)
Recurrent primary disease - benign* ²	2.3% (1)	0.0% (0)	1.5% (1)	2.5% (2)	0.0% (0)	5.8% (3)	1.3% (1)	2.5% (3)
Malignancy - Lymphoproliferative	2.3% (1)	0.0% (0)	3.0% (2)	6.3% (5)	2.9% (1)	1.9% (1)	1.3% (1)	4.9% (6)
Malignancy – Non Lymphoproliferative	0.0% (0)	0.0% (0)	10.6% (7)	2.5% (2)	17.1% (6)	19.2% (10)	24.7% (19)	13.9% (17)
Sepsis	45.5% (20)	42.3% (61)	28.8% (19)	41.2% (33)	17.1% (6)	30.7% (16)	22.0% (17)	29.5% (36)
Graft Failure	2.3% (1)	4.2% (6)	4.6% (3)	0.0% (0)	0.0% (0)	1.9% (1)	1.3% (1)	0.8% (1)
Haemorrhage	4.5% (2)	6.9% (10)	3.0% (2)	2.5% (2)	2.9% (1)	0.0% (0)	1.3% (1)	1.6% (2)
Pulmonary Failure	2.3% (1)	6.3% (9)	6.1% (4)	11.3% (9)	0.0% (0)	7.7% (4)	9.1% (7)	5.8% (7)
Renal Failure	0.0% (0)	0.7% (1)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.8% (1)
Cardiac Failure	9.1% (4)	9.7% (14)	1.5% (1)	6.3% (5)	5.7% (2)	5.8% (3)	1.3% (1)	6.6% (8)
Hepatic Failure	2.3% (1)	0.7% (1)	0.0% (0)	2.5% (2)	0.0% (0)	0.0% (0)	2.6% (2)	1.6% (2)
Gastrointestinal	0.0% (0)	0.7% (1)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	1.3% (1)	1.6% (2)
Infection	4.5% (2)	0.7% (1)	3.0% (2)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.8% (1)
CVA	4.5% (2)	3.5% (5)	0.0% (0)	3.7% (3)	0.0% (0)	0.0% (0)	1.3% (1)	2.5% (3)
Other	20.4% (9)	22.2% (32)	13.6% (9)	16.2% (13)	5.7% (2)	15.4% (8)	10.4% (8)	10.7% (13)
Unknown	0.0% (0)	2.1% (3)	7.6% (5)	5.0% (4)	14.3% (5)	7.7% (4)	6.5% (5)	14.8% (18)
P value*⁴	0.38		0.001		0.01		0.03	

*¹ Recurrence of malignant disease for patients transplanted for non-HCC indications likely represents recurrence of a intrahepatic malignancy only identified on explant pathology or an error in the recording cause of death

*² Includes the recurrence of HCV and the cholestatic liver diseases (PSC & PBC).

*³ p value of chi squared test comparing distribution of causes of death in HCC and non-HCC patients.