AASLD Nov. 4-8, 2022

The Liver Meeting®

WASHINGTON D.C.

The Best of The Liver Meeting®

LIVER TRANSPLANT

About the program:

Best of The Liver Meeting 2022 was created by the Scientific Program Committee for the benefit of AASLD members, attendees of the annual conference, and other clinicians involved in the treatment of liver diseases. The program is intended to highlight some of the key oral and poster presentations from the meeting and to provide insights from the authors themselves regarding implications for patient care and ongoing research.

Use of these slides:

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The Multi-Organ Dysfunction and Evaluation for Liver Transplantation (MODEL) score predicts high probability of 1-year post-transplant mortality in patients with severe acute-on-chronic liver failure

Aim

To develop and validate a prognostic model to predict 1-year post-transplant mortality in patients with severe acute-on-chronic liver failure (ACLF with 2 or 3+ organ failures) at the time of transplantation.

Methods

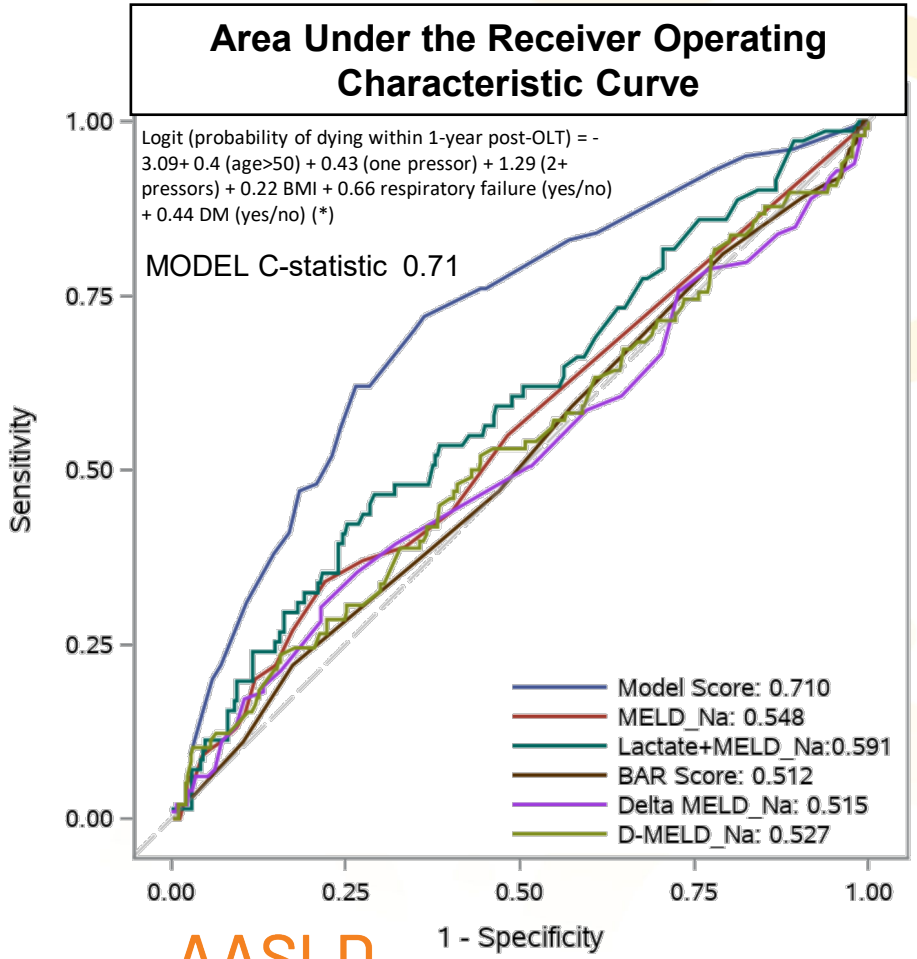
- Design: Retrospective, multicenter cohort study of 15 US transplant centers (2014-2019).
- We followed the transparent reporting of a multivariable prediction model for individual prognosis or diagnosis (TRIPOD) statement.
- We used clinically important predictors and modern estimation techniques to develop and internally validate the final model.
- We estimated overall performance, discrimination, and calibration and compared discrimination with other clinical models.

Main Findings

- Our prognostic model based on 521 patients with ACLF 2/3 with 104 deaths within one year was powered to study up to 7 variables.
- The final model included age > 50, body mass index (continuous), use of one or two vasopressors, presence of respiratory failure, and diabetes mellitus.

Conclusions

MODEL can help in the discussion of the risk/benefits ratio in patients with severe ACLF being considered for liver transplantation.



*The risk score variables were updated since abstract submission

Hernaez R, et al., Abstract 3.

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In memory of Dr. Vinay Sundaram

Not all MELD scores are created equal: MELD driven by creatinine has lower intent to treat survival compared to MELD driven by bilirubin or INR

Hypothesis

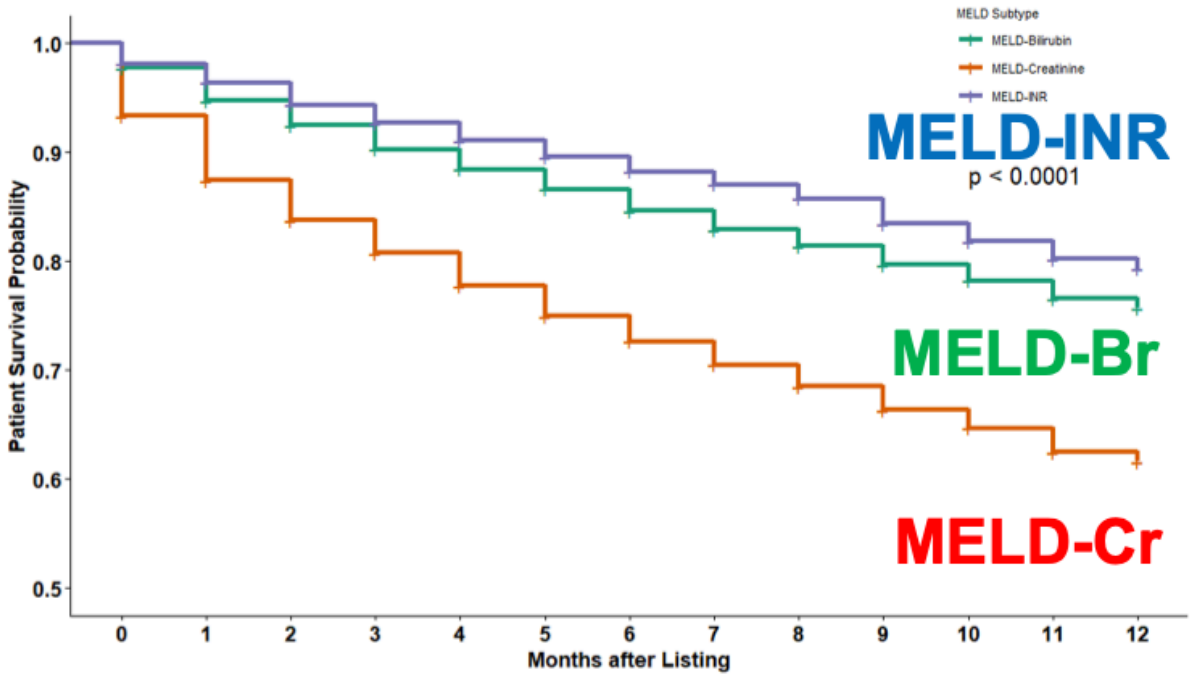
We hypothesized that **for the same MELD score,** intent-to-treat survival may vary by **drivers** of MELD score (Br vs Cr vs INR).

Methods

- All adult LT registrants (2016-2020).
- K-Means Clustering Analysis to classify each patient as either MELD-Br, MELD-INR, or MELD-Cr based on dominant variable for given MELD score.
- Primary outcome: **intent-to-treat survival,** defined as survival within 1 year from listing with or without liver transplantation.

Conclusions

For equivalent listing practices, registrants with MELD scores driven by serum creatinine have lower ITT survival. Among the Cr group, patients with AKI had lower ITT survival than patients with CKD.



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Rosenstengle C, et al., Abstract 5.

Effect of the MMaT-3 policy on post-liver transplant outcomes

Aim

We aimed to evaluate the effect of the Median MELD at Transplant-3 (MMaT-3) exception policy on post-Liver Transplant (LT) outcomes for HCC patients.

Methods

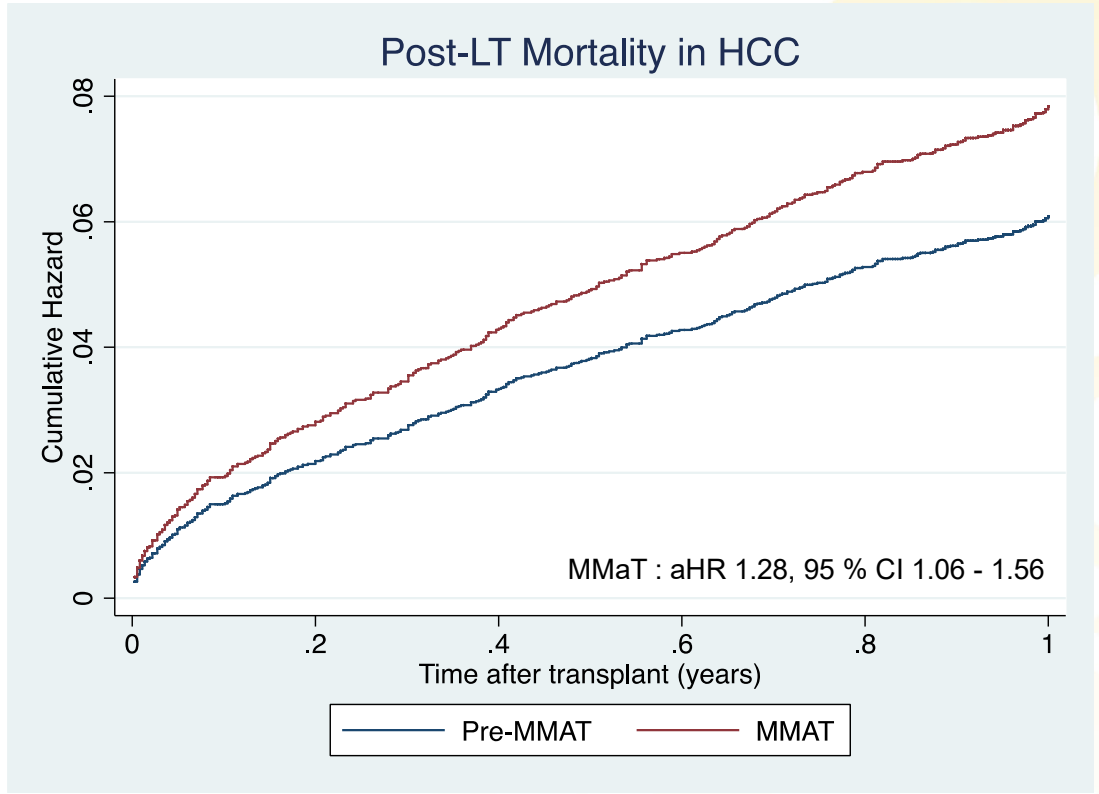
- Using data from the UNOS registry, we compared 1-year post-LT survival and recurrence rates in HCC patients who received LT in the pre-MMaT (8/15/17 – 5/15/19) and MMaT eras (6/01/19 – 3/01/21).
- We compared 1-year post-LT mortality and HCC recurrence risk between groups, as well as likelihood of poorly differentiated HCC on explant.

Main Findings

- 1-year post-LT mortality risk for HCC patients was 28% higher in the MMaT era (Figure); however, HCC recurrence rates were comparable, with no statistically significant difference.
- HCC patients that received LT in the MMaT era had a 46% lower likelihood of poorly differentiated HCC on explant.

Conclusions

- Preliminary data suggest that HCC patients who received LT in the MMaT era had significantly higher post-LT mortality rates than previous HCC patients.
- Long-term data are needed to determine how the MMaT policy has impacted HCC survival and recurrence rates following LT.



Cholankeril G, et al., Abstract 7.

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MELD 3.0 predicts 90-day waitlist mortality in adolescent liver transplant candidates

Objective

To evaluate the predictive performance of MELD 3.0, which is proposed to replace MELD-Na in the current liver allocation system, for adolescent liver transplant candidates.

Methods

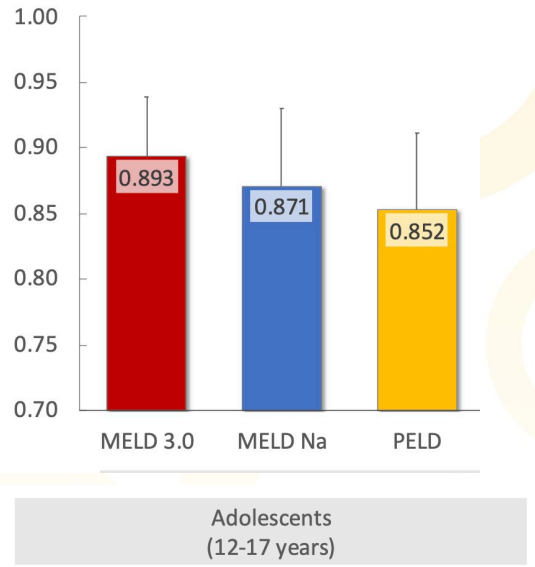
- Analysis of new waitlist registrations for adolescent liver transplant candidates in the OPTN database (2004-2021).
- MELD 3.0 calculated by: $1.33 + 4.56*\log_e(\text{bilirubin}) + 0.82*(137 - \text{Na}) - 0.24*(137-\text{Na})*\log_e(\text{bilirubin}) + 9.09*\log_e(\text{INR}) + 11.14*\log_e(\text{creatinine}) + 1.85*(3.5-\text{albumin}) - 1.83*(3.5-\text{albumin})*\log_e(\text{creatinine}) + 6$
- Adolescents received the 1.33 points for sex, whether male or female, as proposed.
- Predictive performance for 90-day waitlist mortality compared to MELD-Na and PELD.

Main Findings

- Harrell's C-statistic of 0.893 with MELD 3.0, versus 0.871 with MELD-Na.
- Overall superior waitlist outcomes among candidates aged 12-17 compared to 18-25.

Conclusions

We observe robust predictive performance of MELD 3.0 among adolescent liver transplant candidates, indicating that MELD 3.0 is suitable for liver allocation in this population.



Comparison of c-statistics for MELD 3.0, MELD-Na, and PELD.

Kwong A, et al., Abstract 17.

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Patients with acute-on-chronic liver failure require higher healthcare utilization and adequate optimization prior to living donor liver transplantation

Objective

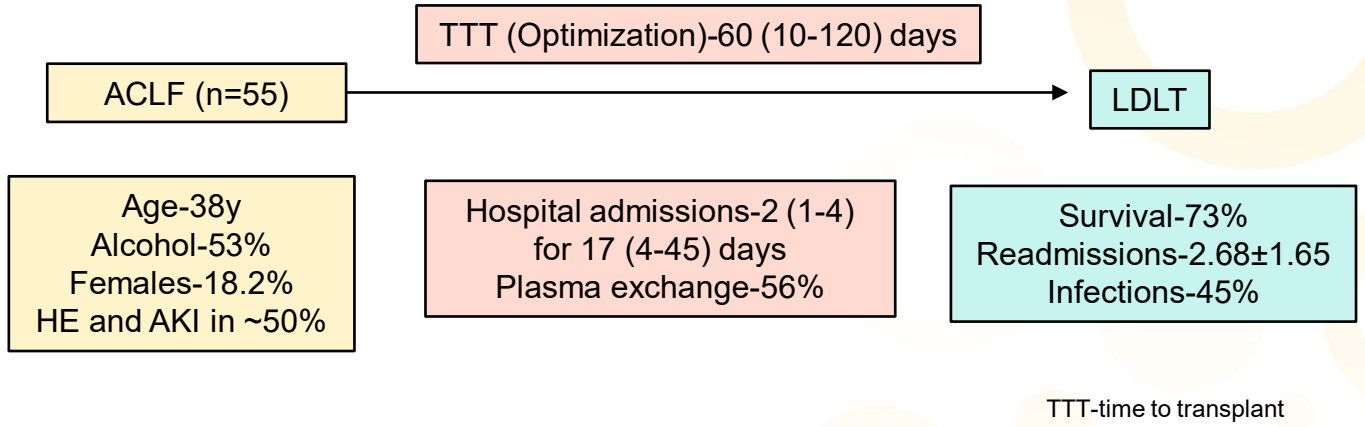
To assess the impact of living donor liver transplantation (LDLT) for patients with acute-on-chronic liver failure (ACLF) on healthcare utilization.

Methods

Patients with APASL-defined ACLF who underwent LDLT at AIG Hospitals, Hyderabad, India.

Main Findings

- Of the 73 patients listed, 18 died on waitlist.
- 55 patients underwent LDLT (Figure).



TTT-time to transplant

Conclusions

Healthcare utilization is high due to requirement of adequate optimization for patients with ACLF who undergo LDLT.

Kulkarni A, et al., Abstract 58.

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Characteristics and outcomes of living donor liver transplantation in patients with native Model for End-stage Liver Disease score ≥ 25 in the current era

Aim

Examine characteristics and outcomes of **living donor liver transplantation (LDLT)** in patients with **advanced native MELD score**.

Methods

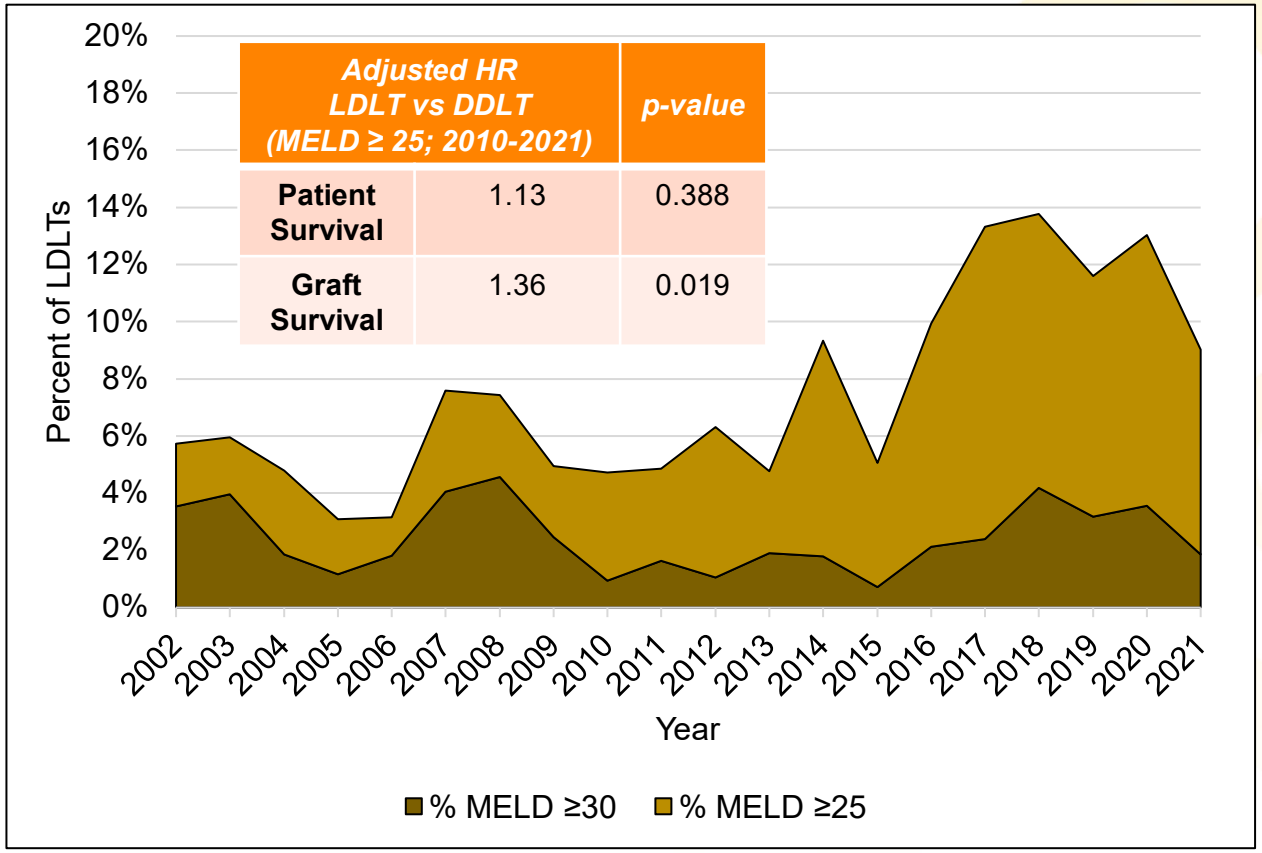
Retrospective cohort study of adult liver transplant recipients from 1/1/2010-12/31/2021 using Organ Procurement and Transplantation Network data, comparing native MELD at transplant < 25 vs ≥ 25 and LDLT vs deceased donor liver transplantation (DDLT).

Main Findings

- Percent LDLTs with MELD ≥ 25 has increased since 2015 (Figure).
- **Unadjusted and adjusted patient survival was not different** between LDLT and DDLT with MELD ≥ 25.
- However, LDLT recipients with MELD ≥ 25 were **more likely to be re-transplanted** and had **worse adjusted graft survival** than the DDLT recipients with MELD ≥ 25 (Table).

Conclusions

In recipients with MELD ≥ 25, the advantages of LDLT over DDLT may be diminished. Studies are needed to identify strategies that improve LDLT graft outcomes in this group.



Rosenthal B., et al., Abstract 59.

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Initial high anti-ABO isoagglutinin titer is a major red flag of bacterial infection in ABO-incompatible living donor liver transplantation

Aim

Analyze the risk of infectious complication, graft failure, and mortality in ABO incompatible living donor liver transplantation (LDLT) with initial high anti-ABO isoagglutinin (IA) titer.

Methods

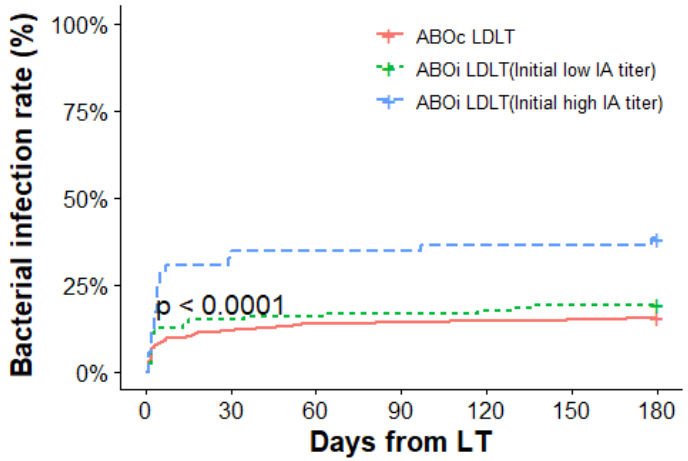
- Retrospective, single-center study, from January 2012 to December 2021, of 681 adult LDLT recipients.
- By the cut-off value of 1:256 (anti-ABO IA titer), divided by two groups with initial low and high anti-ABO IA titer groups.

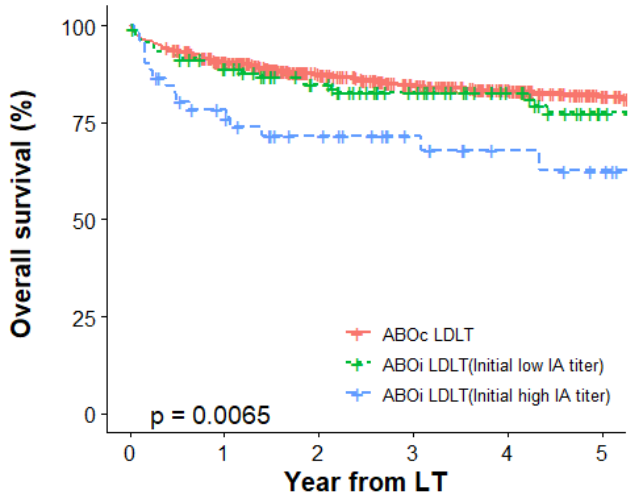
Main Findings

- Initial high IA titer ABO-incompatible (ABOi) LDLT group had a significantly higher rate of bacterial infection, mortality than the other two groups.
- In the initial high IA titer ABOi LDLT group, recipients who received more than 8 preoperative plasma exchanges had a lower overall survival rate.

Conclusions

Among ABO-incompatible LDLTs, recipients with an initial high IA titer are more susceptible to bacterial infections, along with reducing overall survival rate.





Number at risk

ABOc LDLT	510	427	337	279	218	167
ABOi LDLT(Initial low IA titer)	119	101	80	64	51	35
ABOi LDLT(Initial high IA titer)	52	36	27	19	13	10

Choi MC, et al., Abstract 61.

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Duration of blood pressure control is associated with better renal function after liver transplantation

Aim

Is treatment of hypertension to <140/90 mmHg after liver transplant (LT) associated with better renal function at 1 year?

Methods

- Post hoc analysis of prospective, randomized, open-label H2304 study of EVR/rTAC vs. TAC elimination vs. standard TAC.
- Adult *de novo* primary LT recipients (n=679).
- BP measured 2 weeks prior to randomization (baseline) and each visit up to week 52.
- GFR estimated using MDRD4 equation at week 52.

Main Findings

- 73% subjects had BP treated with mean of 1.9 BP meds.
- 68% of treated subjects achieved BP <140/90 at week 52.
- Among treated, eGFR at week 52 increased 0.93 ml/min per each week spent with BP <140/<90 mmHg (Table).

Conclusions

Treatment of HTN with a goal of maintaining BP below 140/90mmHg in the first year after LT is associated with better renal function independent of comorbidities and immunosuppressant regimen.

Characteristic	β (SE)	P value
Cumulative time <140/90 mmHg	**0.93 (0.31)**	**0.004**
Age 51 – 55 yrs	-6.04 (2.64)	0.02
Age 56 – 60 yrs	-9.53 (2.46)	0.0001
Age 61 – 70 yrs	-12.23 (2.58)	<0.0001
Female Sex	-4.94 (1.99)	0.01
Non-White Race	4.44 (2.53)	0.08
No. of BP Medications	0.84 (2.07)	0.68
Baseline eGFR	0.23 (0.02)	<0.001
TAC elimination Group	4.03 (2.19)	0.07
TAC control Group	-9.82 (2.18)	<0.0001
Diabetes	-1.70 (2.81)	0.54
ASCVD	-4.13 (3.20)	0.20

Cabrera E, et al., Abstract 69.

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Pretransplant terlipressin treatment for hepatorenal syndrome decreases the need for renal replacement therapy both pre- and posttransplant: A 12-month follow-up analysis of the CONFIRM trial

Aim

To assess the incidence of RRT through 12 months of follow-up in the subgroup of liver transplant recipients from CONFIRM[1]; the largest randomized, placebo-controlled, phase III study of terlipressin for the treatment of patients with HRS-AKI[a].

Methods

The incidence of RRT (pre- and posttransplant) was compared between treatment groups in liver transplant recipients from the CONFIRM trial, who were alive by Day 90 and Month 12 of follow-up (terlipressin, n=43; placebo, n=27).

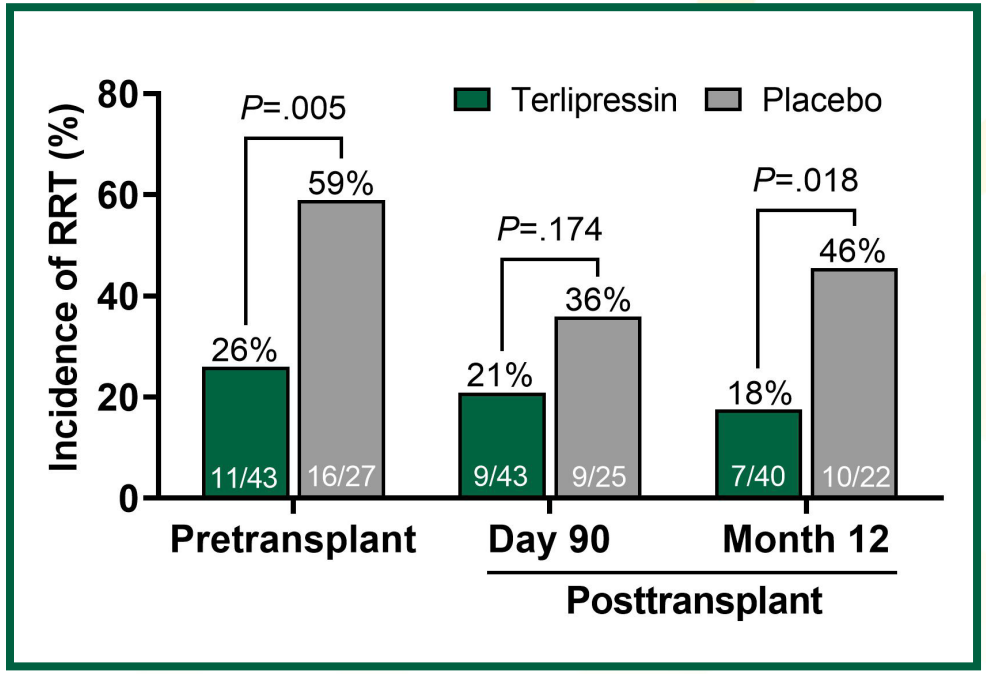
Main Findings

Compared with placebo, terlipressin treatment led to a lower incidence of RRT both pretransplant and up to 12 months posttransplant in patients with HRS-AKI (**Figure**).

Conclusions

Consistent with previous reports[2], terlipressin reduced the incidence of pre- and posttransplant RRT up to 1 year, compared with placebo, which is associated with improved clinical outcomes, including a higher rate of renal recovery and an improved long-term prognosis for patients with HRS-AKI[3].

Figure. Incidence of RRT in liver transplant recipients, both pre- and posttransplant, who were alive by Day 90 and Month 12 of follow-up



[a] HRS-AKI was defined as a doubling of serum creatinine to ≥2.25 mg/dL within 14 days of randomization.
HRS-AKI, hepatorenal syndrome-acute kidney injury; RRT, renal replacement therapy.

1. Wong F, et al., *N Engl J Med*. 2021;384(9):818–828; 2. Piano S, et al. *Hepatology*. 2021 May;73(5):1909-1919;
3. Sharma P, et al. *Clin J Am Soc Nephrol*. 2013 Jul;8(7):1135-42.

Weinberg E, et al., Abstract 164.

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Exosome shedding is associated with time to progression in non-resectable, transplant-eligible HCC undergoing first cycle liver-directed therapy

Hypothesis/Aim/Objective

In this study, we investigate the prognostic significance of exosome shedding in early-stage HCC patients for time to progression (TTP) after undergoing liver-directed therapy (LDT) as a bridge to liver transplantation.

Methods

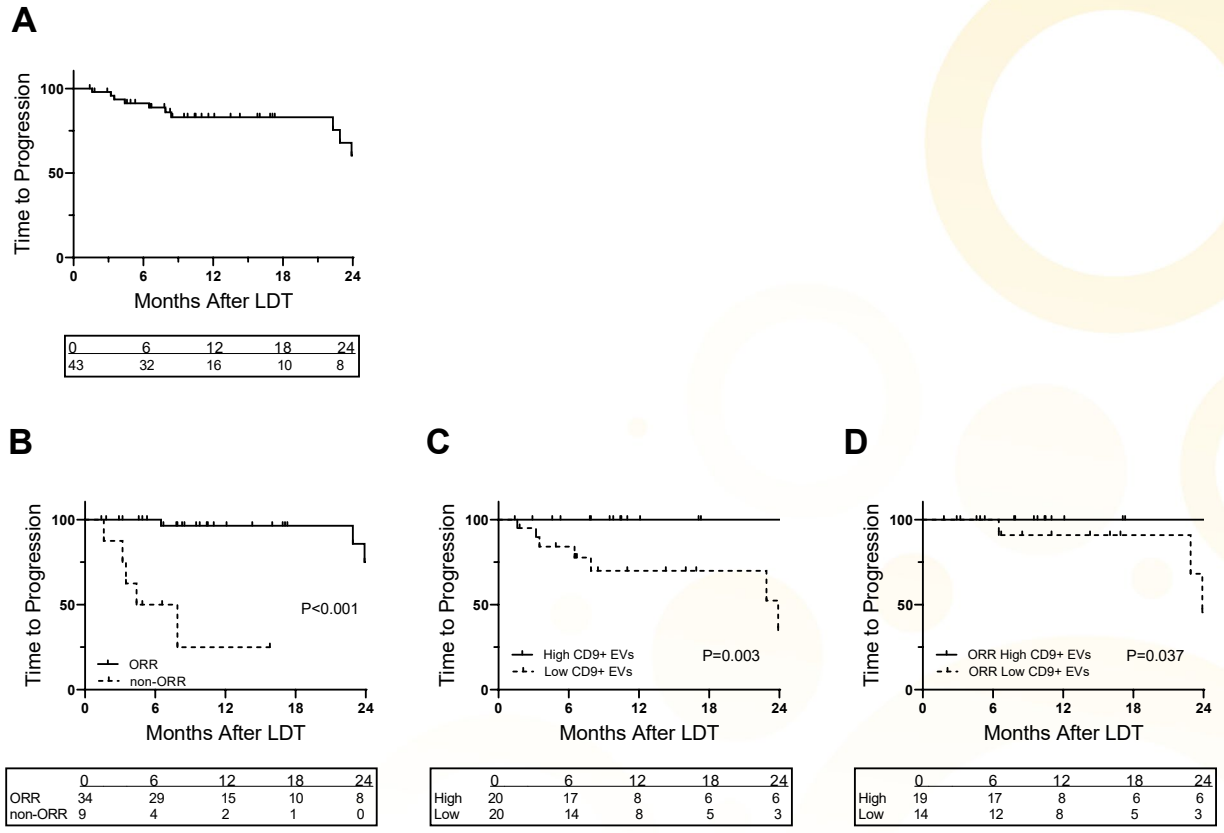
Purified exosomes were isolated from 43 BCLC A-B patients and stained using exosome-specific markers CD9 and CD63 and quantified using Amnis ImageStreamX MkII flow cytometer.

Main Findings

- Patients with high CD9+ exosome shedding after treatment showed superior TTP (P=00.003) at 6, 12, and 24 months of 100%, 100%, 100%, compared to 84%, 70%, and 35% in low CD9+ exosome shedding group.
- In patients with ORR, those with high CD9+ exosome shedding after treatment showed longer TTP at 6, 12, and 24 months of 100%, 100%, and 100% compared to 100%, 90%, and 45% in those patients with low CD9+ exosome shedding.

Conclusions

In early-stage HCC patients, low exosome shedding is prognostic for HCC progression post treatment.



Nunez K, et al., Abstract 203.

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Accuracy of non-invasive test of liver fibrosis in detecting significant fibrosis in liver transplant recipients

Objective

We evaluated the accuracy of the FibroScan, Fibrosis-4 (FIB-4) Index, and AST to Platelet Ratio Index (APRI) in detecting fibrosis in Liver Transplant Recipients (LTR).

Methods

- Sixty-five consecutive liver transplant patients who underwent liver biopsy (LB) and non-invasive tests of fibrosis (NITF) were included in the study.
- We studied the accuracy of non-invasive test of fibrosis (NITF) in detecting clinically significant fibrosis (CSF) (Stage 2-4).

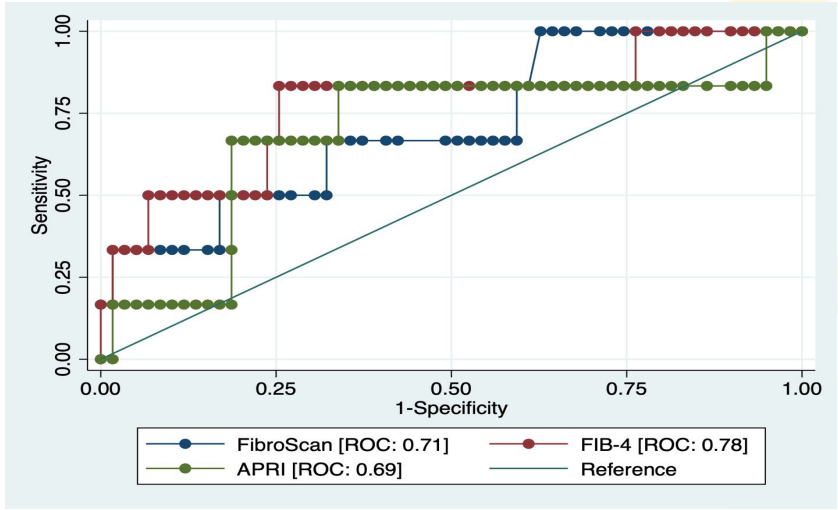
Main Findings

- The AUROC of the FibroScan, FIB-4 index, and APRI to detect CSF were 0.71, 0.77, and 0.69, respectively.
- For specific cut-off value FibroScan (kPa≥7.3), FIB-4 Index (≥2.36), APRI (≥0.66) for detecting CSF has 83.33% sensitivity and specificity of 40.68%, 74.58%, and 66.10%, respectively.
- All of these NITFs showed a high negative predictive value (NPV) (>95%).

Conclusions

Given the negative predictive value in excluding clinically significant fibrosis, these NITFs are useful in monitoring fibrosis in liver transplant recipients.

Kothadia J, et al., Abstract 1532.



Sensitivity, Specificity of NITF for Detecting Significant Fibrosis Using Biopsy as a Gold Standard Test.

	Cut-off value	Sensitivity	Specificity	PPV	NPV	LR+	LR-
FibroScan (kPa)	≥ 7.3	83.33%	40.68%	12.46%	96.01%	1.40	0.41
FIB-4	≥ 2.36	83.33%	74.58%	24.93%	97.79%	3.28	0.22
APRI	≥ 0.66	83.33%	66.10%	19.94%	97.51%	2.46	0.25

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Patients with ESLD are physically inactive and unable to sustain moderate intensity physical activity: A prospective home-based case-controlled UK study

Aims

- To compare daily physical activity (PA) patterns between patients with end-stage liver disease (ESLD) and healthy controls (HC).
- To investigate the association between symptom burden, physical frailty, and disease severity on PA.

Methods

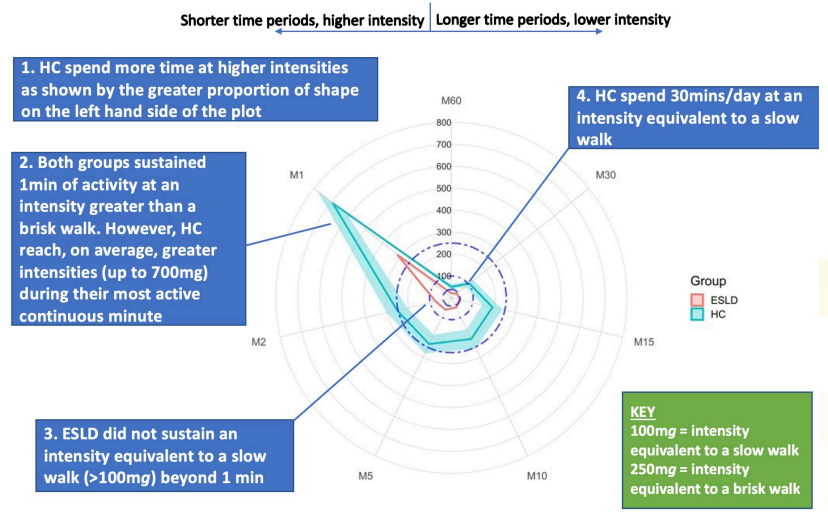
- In this prospective observational study, 60 participants (ESLD=43, HC=17) were recruited and wore a wrist-worn accelerometer at home for 2-weeks.
- Clinical status and liver frailty index (LFI) were assessed alongside total inactivity, moderate intensity physical activity (MIPA), total moderate-vigorous physical activity (TMVPA), and intensity for most active continuous time periods.

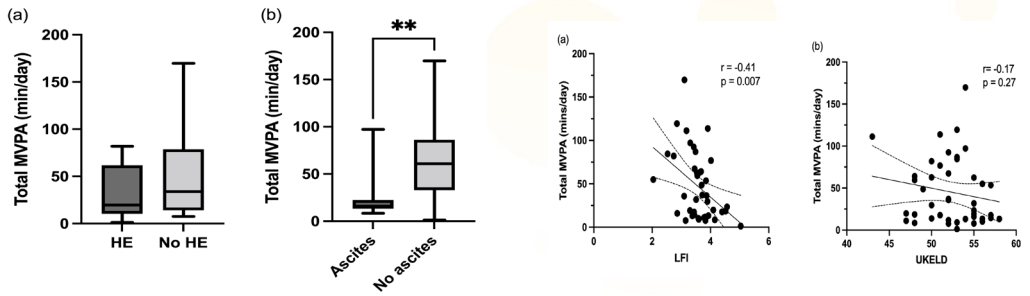
Main Findings

- Participants with ESLD spent significantly more of their day inactive than HC (58% vs 48%, p=<0.001) and did not sustain MIPA for longer than one minute.
- Significantly less time was spent in TMVPA for those with refractory ascites, but no difference for those with hepatic encephalopathy. LFI, but not MELD, was associated with TMVPA.

Conclusions

Patients with ESLD are more inactive than HC. LFI and ascites are associated with physical inactivity, but not hepatic encephalopathy or disease severity.





Williams F, et al., Abstract 1547.

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Thoracoabdominal DCD (TA-DCD) organ procurement impacts liver utilization but preserves graft outcomes

Objective

To identify the impact of simultaneous heart and liver donation after cardiac death (DCD) organ procurement on liver allograft utilization rates and graft outcomes

- TA-DCD is accomplished by direct procurement and machine perfusion (DPP) or normothermic regional perfusion (NRP)

Methods

Retrospective review of UNOS STAR database comparing TA-DCD liver outcomes to abdominal-only DCD and DBD liver transplants from 12/2019-6/2021

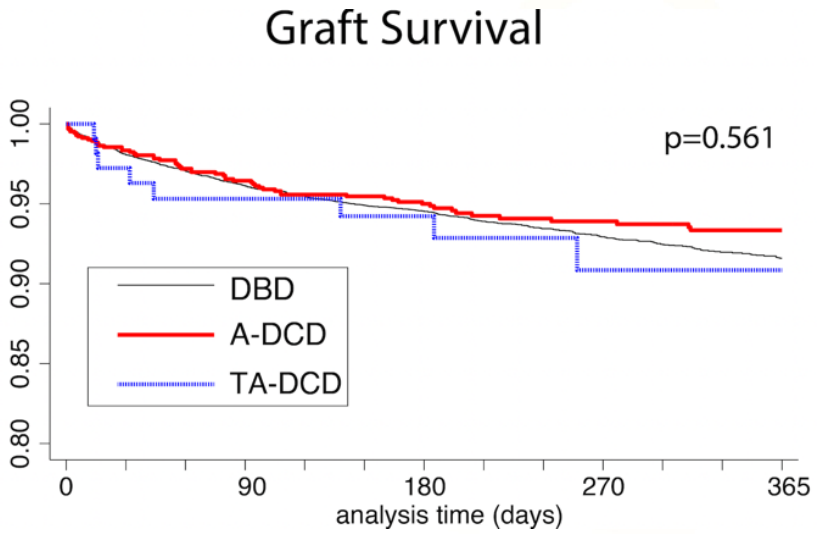
Main Findings

- TA-DCD increases liver discard for warm ischemia time, particularly for DPP technique ($p<0.001$)
- NRP shows lowest rate of liver discard for all DCD liver procurements ($p=0.002$)
- Short-term patient and graft outcomes are similar to DBD and abdominal-only DCD transplant ($p>0.05$)

Conclusions

TA-DCD results in acceptable short-term graft and patient outcomes.
NRP may be an optimal technique to maximize organ utilization in DCD transplant.

	TA-DCD			A-DCD	DBD	P value
	Overall	DPP	TA-NRP			
n	160	135	25	1706	12840	
Organ Utilization						
Organs discarded, *n*	27	26	1	487	888	
Organ discard rate	16.9%	19.3%	4%	28.5%	6.9%	<0.001
Indications for Discard						<0.001
Warm ischemia time	10 (37.0%)	9 (34.6%)	1 (100%)	107 (22.0%)	5 (0.6%)	
Vascular damage	1 (3.7%)	1 (3.8%)	0 (0%)	3 (0.6%)	15 (1.7%)	
Organ Trauma	3 (11.1%)	3 (11.5%)	0(0%)	11 (2.2%)	12 (1.4%)	



Wisel S, et al., Abstract 1557.

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Clinical characteristics associated with post-transplant survival among patients ≥70 years old undergoing liver transplantation

Objective

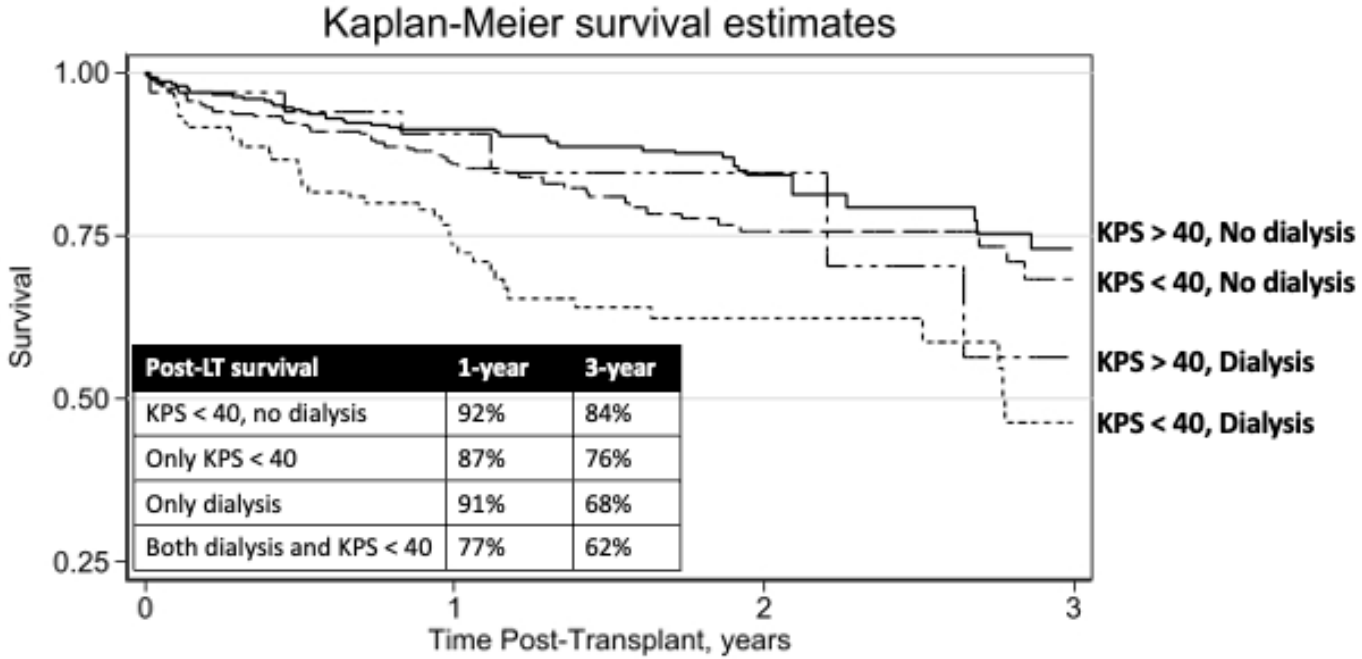
To identify pre-liver transplant (LT) characteristics among older adults that are associated with post-LT survival.

Methods

Examined clinical covariates associated with post-LT mortality among deceased donor LT recipients in the UNOS registry.

Main Findings

- Older adults had worse post-LT survival than younger adults (1-year: 88% vs. 92%, 3-year: 77% vs. 86%).
- Poor functional status (HR 1.52, 95%CI 1.03-2.23) and dialysis (HR 1.44, 95%CI 0.62-3.36) were independently associated with increased post-LT mortality in older adults.
- The effects of both poor functional status and dialysis (HR 2.67, 95%CI 1.77-4.01) on post-LT survival were worse than either alone.



Post-LT survival	1-year	3-year
KPS < 40, no dialysis	92%	84%
Only KPS < 40	87%	76%
Only dialysis	91%	68%
Both dialysis and KPS < 40	77%	62%

Conclusions

Poor functional status (Karnofsky Performance Score (KPS) < 40) and need for dialysis at liver transplantation may be used to stratify older adults at risk for poor post-LT outcomes.

Wang M, et al., Abstract 1568.

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Long-term mental health utilization among 576 living liver donors: A population-based study

Objective

To evaluate rates and predictors of healthcare utilization for mental health (MH) conditions among live liver donors (LD).

Methods

- Population-based cohort study in Ontario, Canada from 2008-2021 using ICES data.
- N=576 LD aged 16-60 were identified using billing codes.
- Outpatient, ED, and inpatient MH encounters were identified.

Main Findings

- After median FU of 7 years, 83/576 (14%) had mental health encounters: mostly outpatient visits related to mood disorders (62/83, 75%).
- Presentation for deliberate self-harm and substance abuse occurred in <6/576 (<1%), ER/inpatient MH in 36/576 (6%).
- Pre-donation MH encounter was associated with a 6-fold increased hazard of post-donation MH encounter (Table).

Conclusions

After donation, LD have low rates of presentation for self-harm, substance use disorder, and ER/inpatient MH encounters.

Table: Cox regression to evaluate the association between live donor factors and post-donation mental health encounters.

	Unadjusted			Adjusted		
	HR	**95% CI**	**P value**	**HR**	**95% CI**	**P value**
Age (years)	0.99	0.97-1.01	.233	1.00	0.98-1.02	.984
Male vs. female sex	0.82	0.55-1.24	.352	0.81	0.54-1.23	.329
Income quintile						
1 (lowest)	1.82	0.99-3.32	.052	1.55	0.84-2.87	.161
2	0.85	0.45-1.64	.636	0.80	0.41-1.54	.504
3	0.85	0.44-1.66	.635	0.85	0.43-1.65	.622
4	0.84	0.45-1.55	.580	0.78	0.42-1.46	.442
5 (highest)	ref	-	-	ref	-	-
Rural vs. urban	1.12	0.61-2.10	.715	1.01	0.55-1.87	.971
Pre-donation ER/inpatient MH encounter	6.79	4.07-11.35	<.001	6.43	3.79-10.93	<.001

HR: hazard ratio; CI: confidence interval; ER: emergency room; MH: mental health

Flemming J, et al., Abstract 1585.

AASLD The Liver Meeting®

Impact of cirrhotic cardiomyopathy and its echocardiographic components on intraoperative and perioperative outcomes after liver transplant

Objective

Evaluate cirrhotic cardiomyopathy (CCM) impact on intra- and peri-operative liver transplant (LT) outcomes.

Methods

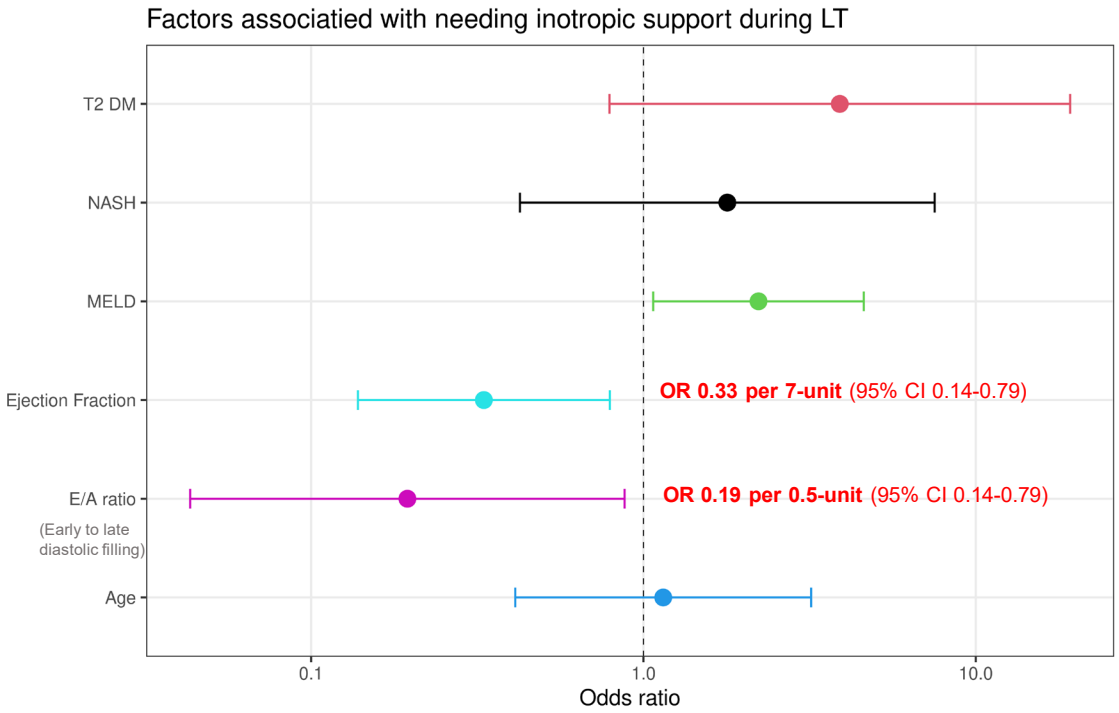
Retrospective study of 167 adult LT recipients assessing the association of intra- and peri-operative LT outcomes with CCM and its echocardiographic markers, measured pre-LT.

Main Findings

- Predictors of inotropic support during LT, on multivariable analysis, are outlined in the Figure.
- CCM per 2020 definition, lower septal e' (impaired relaxation marker), and higher deceleration time (DT) predicted perioperative heart failure.

Conclusion

The echocardiographic markers of CCM can predict intraoperative inotropic support and perioperative heart failure (within 30 days post-LT).



Cozart A, et al., Abstract 1590.

AASLD The Liver Meeting®

The effect of new acuity circle policy on simultaneous liver and kidney transplantation in the United States

Aim

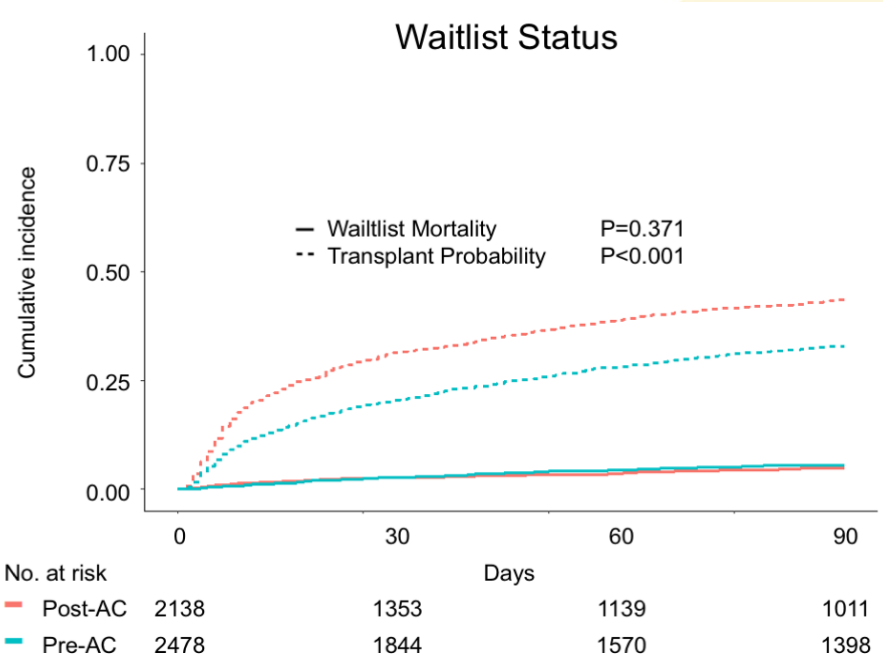
To assess the effect of acuity circle (AC)-policy on simultaneous liver and kidney transplantation (SLKT) waitlist mortality, transplant probability, and post-transplant outcomes.

Methods

Using the UNOS database, 4,692 adult SLKT candidates were included

- pre-AC (Aug-2017 to Feb-2020, N=2516)
- post-AC (Feb-2020 to Dec-2021, N=2176)

Outcomes included 90-day waitlist mortality, transplant probability, and post-transplant patient/graft survival.



Main Findings

SLKT recipients during post-AC period had

- Higher median MELD score (24 vs 23, P<0.001)
- Less percentage of MELD exception (4.8% vs 7.0%, P=0.001)
- Increased utilization of donation after cardiac death organs (11% vs 6.4%, P<0.001)
- Decreased rates of SLKT among African-American candidates (7.9% vs 13%)

Post-AC period was not associated with any significant difference in 90-day waitlist mortality (sub-distribution hazard ratio [sHR] 0.77; 95% CI 0.55-1.08, P=0.13), a higher 90-day probability of SLKT (sHR 1.52; 95% CI 1.32-1.88, P<0.001), and comparable in post-transplant outcomes (patient and graft survivals).

Conclusions

AC liver allocation policy increased transplant probability of adult SLKT candidates without decreasing waitlist mortality, post-transplant patient survival, and liver and kidney graft survival.

Okumura K, et al., Abstract 1591.

AASLD The Liver Meeting®

Introduction of national liver review board is associated with a decrease in hepatocellular carcinoma outside Milan criteria on explant analysis

Aim

- In May 2019, a national liver review board (NLRB) replaced regional review boards to evaluate liver transplant (LT) patients with hepatocellular carcinoma (HCC) for exception MELD scores.
- Aims of the NLRB were to standardize the exception process and reduce disparities in transplant opportunities.
- To evaluate the outcome of NLRB policy changes on HCC explant pathology.

Methods

- Liver transplant patients listed with HCC exception from Jan. 1, 2016 to Dec. 31, 2021 from OPTN/UNOS database.
- Patients were divided into 2 groups (pre-NLRB era, post-NLRB era) according to a registration date before or after May 14, 2019.
- As a subgroup analysis, transplant regions were divided into 2 groups based on the approval of HCC exception prior to the NLRB: a high outside standard criteria group (>=50% did not meet standard criteria at approval) and low outside standard criteria group (<50% did not meet standard criteria at approval).
- Using explant data, the proportion of patients outside Milan criteria were compared between eras.

Conclusions

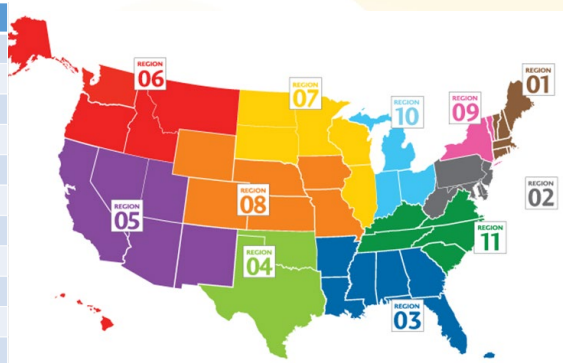
Introduction of the NLRB was associated with a decrease in HCC outside Milan criteria on explant and reduced disparities in LT access for HCC.

Main Findings

The proportion of HCC outside Milan significantly decreased after policy change. In the high outside standard criteria group, there was a significant decline in HCC outside Milan.

	Pre-NLRB era	Post-NLRB era	P value
Total HCC transplant	4,429	1,746	
Outside Milan	1,176 (26.6)	406 (23.3)	OR; 0.838 p=0.007

Explant Outside Milan	Pre-NLRB era	Post-NLRB era	P value
Region 1	49/201 (24.3)	13/68 (19.1)	0.373
Region 2	162/553 (29.3)	52/179 (29.0)	0.950
Region 3	157/652 (24.1)	48/236 (20.3)	0.243
Region 4	120/562 (21.3)	54/209 (25.8)	0.185
Region 5	134/567 (23.6)	69/321 (21.5)	0.466
Region 6	65/193 (33.7)	10/63 (15.9)	0.007
Region 7	107/424 (25.2)	40/173 (23.1)	0.586
Region 8	78/237 (32.9)	17/80 (21.3)	0.049
Region 9	85/230 (37.0)	32/112 (28.6)	0.125
Region 10	78/312 (25.0)	27/136 (19.9)	0.237
Region 11	141/498 (28.3)	44/169 (26.0)	0.568



	Pre-NLRB era	Post-NLRB era	P value
Area with high outside criteria patient (not meeting criteria>50%) Region 3,6,8,10,11	519/1892 (27.4)	146/684 (21.3)	OR; 0.718 P=0.002
Area with low outside criteria patient (not meeting criteria=<50%) Region 1,2,4,5,7,9	657/2537 (25.9)	260/1062 (24.5)	OR; 0.928 p=0.374

Miyake K, et al., Abstract 1597.

AASLD The Liver Meeting®

Fenofibrate improves cholestasis in liver allograft ischemic cholangiopathy

Aim

- Ischemic cholangiopathy (IC) affects up to 15% of liver transplants (LT) donated after circulatory death (DCD), with allograft failure occurring in 60%.
- Bile acid accumulation and activity may be central to IC pathogenesis.
- We investigated if fenofibrate—a <$25/month oral agent that downregulates bile acid production, could improve cholestasis in IC.

Methods

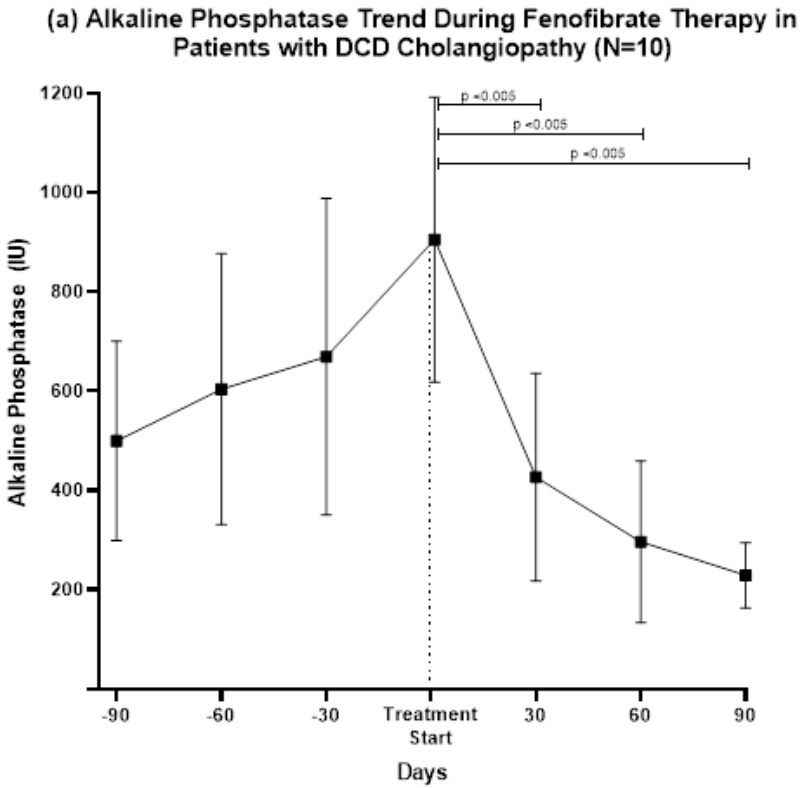
Internally-controlled prospective study of once-daily fenofibrate for 90 days in 10 DCD LT recipients undergoing IC treatment with serial ERCP.

Main Findings

- Cumulative reduction of ALP by 76% at 90 days (p<0.005).
- ALP improved irrespective of ERCP use or IC subtype.
- Treatment was stopped 1 patient at day 60 due to worsening cholestasis.

Conclusions

In 10 patients with progressive IC undergoing serial ERCP, introduction of fenofibrate was associated with a 76% ALP improvement at 90 days.



Barnhill M, et al., Abstract LO3.

AASLD The Liver Meeting®

Hypothermic Oxygenated PErfusion (HOPE) for liver transplant: Early results of the VitaSmart device trial

Objective

Demonstrate safety & efficacy of *ex situ*, end ischemic, portal venous HOPE of extended criteria donor after brain death (DBD) and donor after circulatory death (DCD) livers.

Methods

Multi-center, randomized, controlled trial comparing clinical outcomes for patients undergoing transplant of livers after HOPE using the Bridge to Life VitaSmart system versus SCS alone (Clinicaltrials.gov: NCT05045794).

Main Findings

- 61 patients included (initial 25% of target enrollment).
- No device malfunctions/complications or device-related severe adverse events (SAEs).
- Early allograft dysfunction (EAD; 1° endpoint): HOPE = 7/32 (22%), SCS = 10/29 (35%)
- Hospital length of stay (LOS; median days): HOPE = 9.5, SCS = 11.4
- Graft survival: HOPE = 100%, SCS = 97%; Patient survival: HOPE & SCS = 100%

Conclusions

Early trial results reveal promising outcomes with HOPE compared to SCS alone, including device safety, lower risk of EAD, and shorter hospital LOS.

	HOPE (n=32)	SCS (n=29)
Donor age (mean yrs ± SD)	49 ± 15	49 ± 14
DCD (#, %)	6 (19%)	6 (21%)
Recipient age (mean yrs ± SD)	56 ± 10	54 ± 12
MELD (mean ± SD)	21 ± 12	18 ± 9
Cold Ischemia Time (mean min ± SD)	282 ± 65	369 ± 143
HOPE Time (mean min ± SD)	123 ± 32	n/a
Total Cold Time (mean min ± SD)	405 ± 76	369 ± 143

Reich D, et al., Abstract LO9.

AASLD The Liver Meeting®

A new definition of Gilbert syndrome (GS) adjusted on gender and age in large populations

Objective

Address accuracy of the current phenotypic definition of GS and propose new algorithms for diagnosis and prognostic value of GS.

Methods

n=196,558, subset of UK BioBank (apparently healthy volunteers)

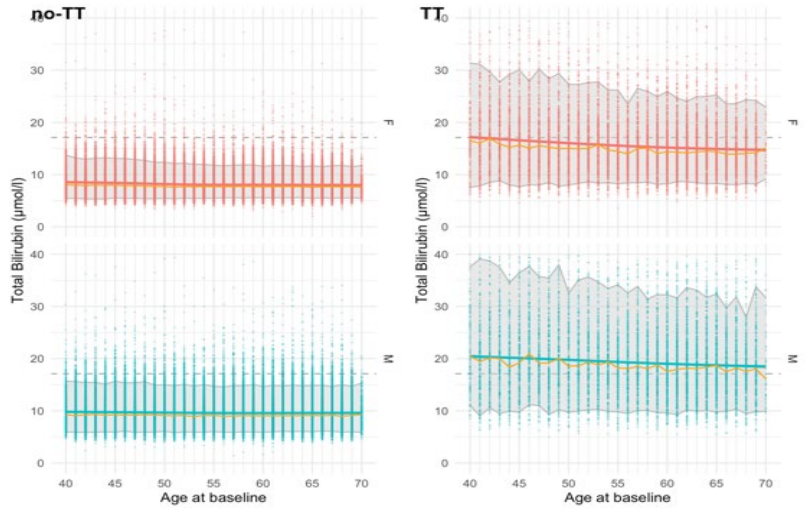
Main Findings

- Bilirubin level is TT-genotype, gender, and age dependent (Panel A).
- <5 µmol/L cutoff is associated with lower survival (Panel B).

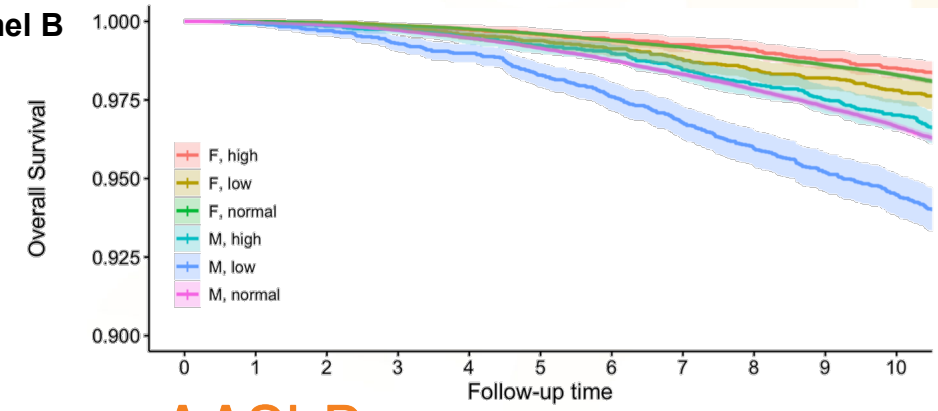
Conclusions

For a simple diagnosis or for assessing the patient's prognostic according to total bilirubin, the conventional 17.1µmol/L cutoff should be modified according to genotype, gender, and age.

Panel A



Panel B



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Poynard T, et al., Abstract LO16.

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