

## Supplemental Online Content

Karnam RS, Chen S, Xu W, et al. Sex disparity in liver transplant and access to living donation. *JAMA Surg*. Published online August 18, 2021.  
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### **eAppendix 2.** Donor sex in DDLT and LDLT

This supplemental material has been provided by the authors to give readers additional information about their work.

## **eAppendix 1. Living donor practice**

It is standard practice in our transplant program to inform patients of the advantages of living donation. All patients are provided with the opportunity to discuss LDLT with a physician who is independent of the Living donor Team. Living donation in our program is voluntary and altruistic. A thorough medical, surgical and psychological assessment is performed to ensure that the living donor makes the decision to donate independently without any coercion or financial incentive and it is safe for them to donate. Our live donor selection process and surgical techniques have been previously described (1). All candidates for LT are placed on the waiting list for deceased donor organs, regardless of whether a pLD is available.

### **Reference**

1. Sapisochin G, Goldaracena N, Laurence JM, Levy GA, Grant DR, Cattral MS. Right lobe living-donor hepatectomy-the Toronto approach, tips and tricks. *Hepatobiliary Surg Nutr.* 2016;5(2):118–11826.

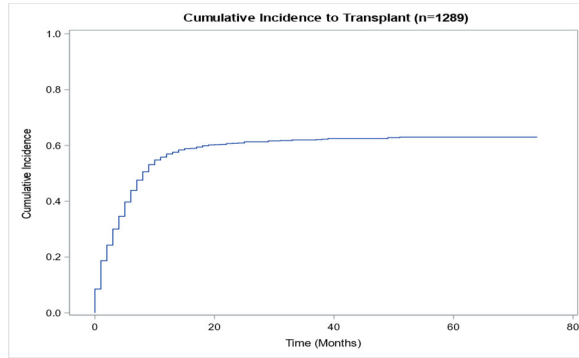
**eTable 1**

Table showing Instantaneous rate of transplant among listed and transplanted patients based on time intervals.

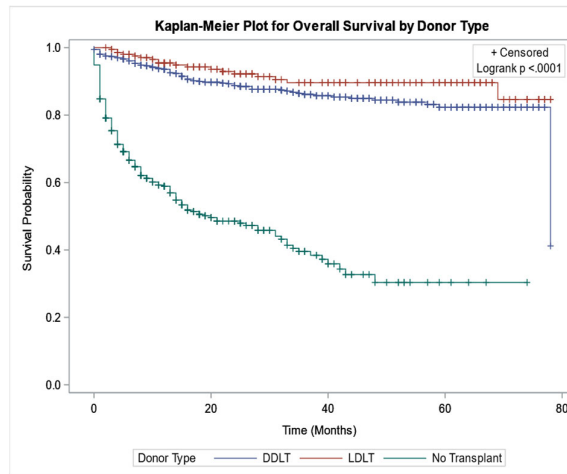
Instantaneous rate of transplant		
Time to LT	Listed (n=1289)	Transplanted (n=783)
6 months	42.54% (40.10-45.13)	68.83% (66.42-71.33)
12 months	55.66% (53.17 – 58.26)	90.34% (88.48 – 92.24)
24 months	59.66% (57.03 – 62.41)	96.99% (95.83 – 98.17)
36 months	60.77% (58.44 – 63.20)	98.63% (95.83 – 98.17)
48 months	61.29% (58.64 – 64.06)	99.33% (98.72 – 99.94)

**eFigure 1**

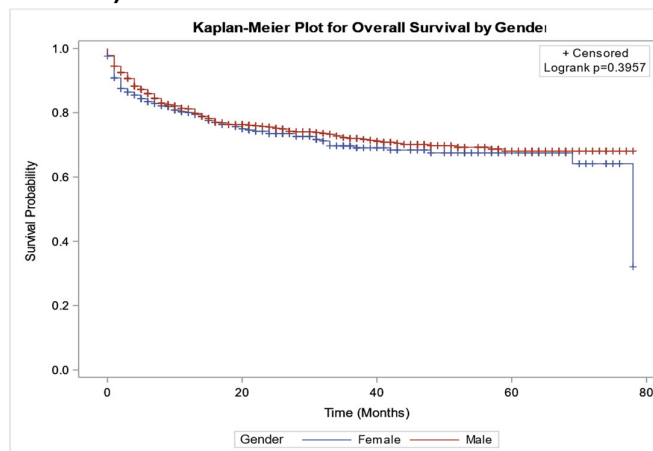
**eFigure 1A - The curve show cumulative incidence of transplant of all the listed patients for LT.**



**eFigure 1B – The curves show the overall survival from the date of listing in candidates with DDLT, LDLT and no LT**

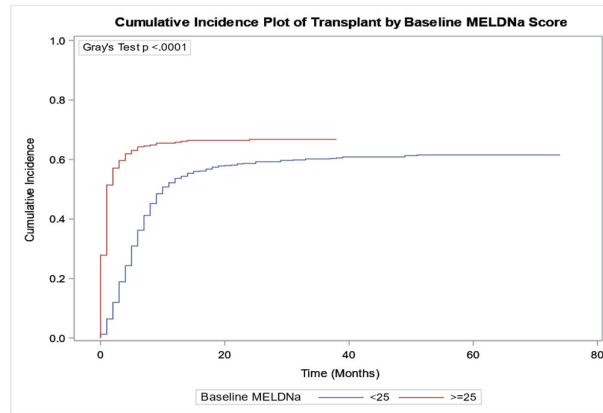


**eFigure 1C - The curves show overall survival in men and women. There is no difference in overall survival between men and women (p=0.40) from listing (including before and after LT)**

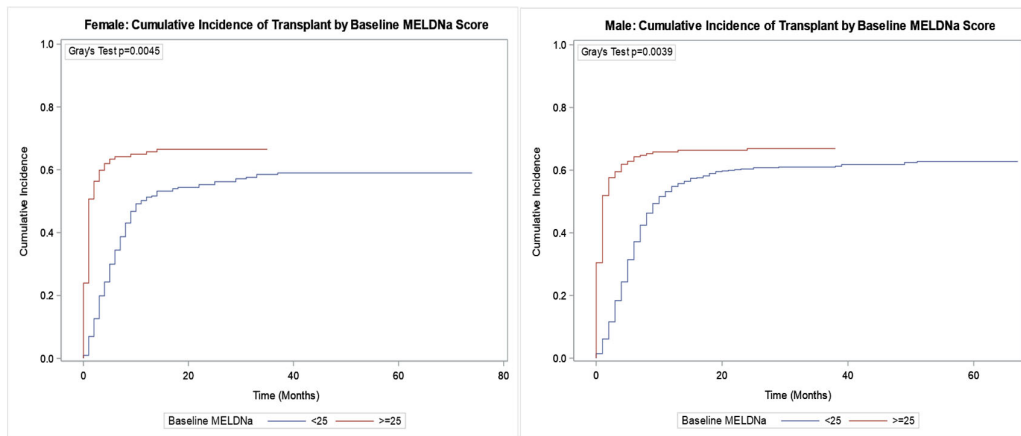


**eFigure 2**

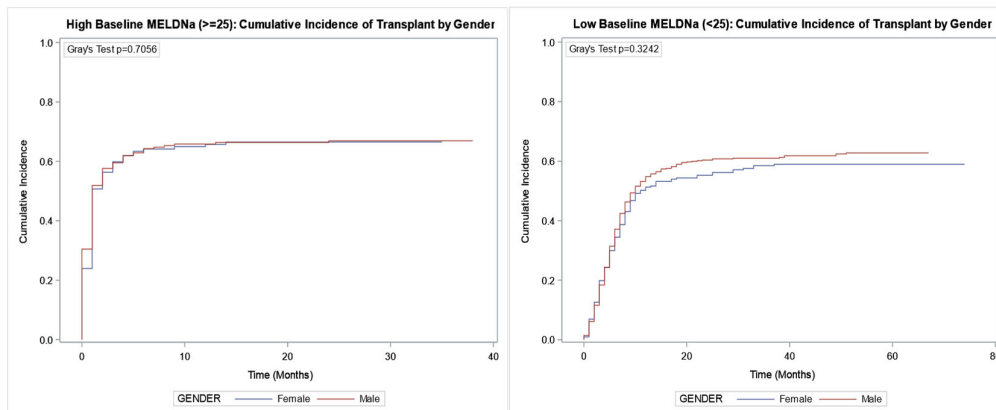
**eFigure 2A – Curves show cumulative incidence of LT in patients with MELDNa scores above and below 25.**



**eFigure 2B – Graphs show cumulative incidence rate curves of LT in female and male with MELDNa scores  $< 25$  and  $\geq 25$**

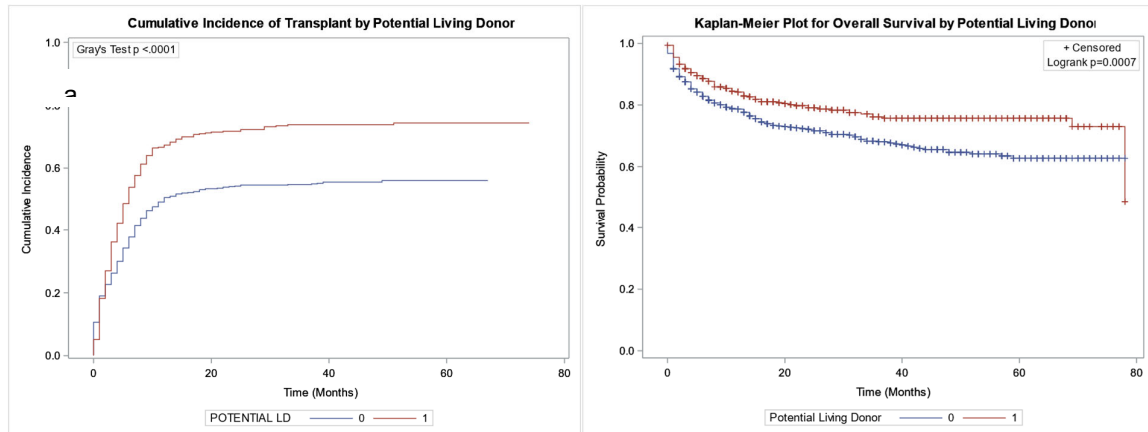


**eFigure 2C - Graphs show cumulative incidence rate curves of LT in groups with MELDNa scores  $< 25$  and  $\geq 25$  divided further into male and female**



### eFigure 3

Cumulative incidence of LT in patients with pLD and without pLD (A). OS in patients in patients with pLD and without pLD (B).



**eTable 2**

Table shows MELDNa scores in no pLD group at various time from listing.

<b>Time</b>	<b>Women</b>	<b>Men</b>	<b>p - value</b>
At listing	22 (6-50)	19 (6-50)	0.0002
At listing with LT in the end	24 (6-47)	19 (6-48)	0.0004
At listing with no eventual LT	21.1 (7-54)	19 (6-50)	0.14
At transplant or drop out (combined)	23 (6-49)	19 (6-52)	<0.0001
At transplant	27 (6-49)	20 (6-52)	<0.0001
At drop out	20 (6-49)	18 (6-47)	0.06

**eTable 3**

**Table shows competing risk multivariable model for time to LT in women with no pLD.**

Multivariable Fine and Gray Competing Risk Model for time to LT		
Covariate	HR (95% CI)	P value
Baseline MELDNa	1.04 (1.02, 1.07)	<b>0.001</b>
$\Delta$ MELDNa*	1.02 (1, 1.05)	0.07
Height (cms)	1.04 (1.01, 1.07)	<b>0.01</b>
Age at listing (years)	0.99 (0.97, 1.02)	0.61
Blood type		0.9
- A vs O	1.05 (0.69, 1.61)	0.82
- B vs O	0.90 (0.48, 1.69)	0.73
- AB vs O	1.27 (0.56, 2.84)	0.57

\* $\Delta$ MELDNa: Change in MELDNa from baseline to last follow up



**eTable 4**

**Table shows competing risk multivariable model for time to LT**

Multivariable Fine and Gray Competing Risk Model for time to LT		
Covariate	HR (95% CI)	P value
Sex (Men versus Women)	1.20 (0.93, 1.55)	<b>0.17</b>
Baseline MELDNa	1.02 (1.01,1.03)	<b>&lt;0.001</b>
Δ MELDNa*	1 (0.99, 1.01)	0.5
Height at listing (cms)	1.01 (1, 1.02)	0.13
Age at listing (years)	0.99 (0.98, 0.99)	<b>&lt;0.001</b>
Potential living donor (pLD)	1.82 (1.43, 2.34)	<b>&lt;0.001</b>
Blood type		<b>0.049</b>
- A vs O	1.25 (1.07, 1.46)	<b>0.0053</b>
- B vs O	1.12 (0.91, 1.38)	0.3
- AB vs O	1.18 (0.87, 1.61)	0.29
Potential living donor * sex		0.053
- Men vs women (no pLD)	1.20 (0.93 – 1.55)	0.17
- Men vs women (with pLD)	0.89 (0.71 – 1.12)	0.33
- pLD vs no pLD (men)	1.36 (1.14 – 1.62)	<b>0.0006</b>
- pLD vs no pLD (women)	1.82 (1.43 – 2.33)	<b>&lt;0.0001</b>

\*ΔMELDNa: Change in MELDNa from baseline to last follow up

**eTable 5**

MELDNa scores in group with no pLD

	With pLD (n=489)		Without pLD (n=800)	
	Men (n=270)	Women	Men	Women
MELDNa at baseline <	158	136	303	100
MELDNa at baseline 21-	88	57	181	99
MELDNa at baseline >	20	26	76	41

**MELDNa at baseline 20 – 30 (n=456, event=380)**

Gender\*pLD interaction term not significant p=0.69.

**MELDNa at baseline >30 (n=167, event=106)**

Gender\*pLD interaction term not significant p=0.37.

**eTable 6: Multivariable Cox PH model for Time to Death or Dropouts due to Bad Outcomes**

Multivariable Cox PH model for Time to Death or Dropouts due to Bad Outcomes				
Covariate	First 6 months		First 15 months	
	HR (95% CI)	P value	HR (95% CI)	P value
Potential Living Donor Stratified by Gender		0.0003		0.0096
- Female: potential living donor (yes vs no)	0.41 (0.25 – 0.68)	0.0005	0.52 (0.34 – 0.79)	0.0019
- Male: potential living donor (yes vs no)	0.60 (0.40 – 0.91)	0.01	0.81 (0.59 – 1.11)	0.19
MELDNa*	1.13 (1.11 – 1.16)	<0.0001	1.14 (1.12 – 1.16)	<0.0001
Height, cm	0.99 (0.97 – 1.01)	0.17	0.99 (0.98 – 1.01)	0.83
Age at listing, years	1.03 (1.01 – 1.05)	0.0025	1.03 (1.01 – 1.04)	0.0002
Blood type		0.39		0.09
- A vs O	0.77 (0.56 – 1.05)	0.10	0.86 (0.66 – 1.11)	0.23
- B vs O	0.95 (0.61 – 1.47)	0.80	0.64 (0.43 – 0.94)	0.02
- AB vs O	1.04 (0.58 – 1.87)	0.90	1.18 (0.73 – 1.91)	0.51

\*MELDNa: Time-dependent MELDNa

## **eAppendix 2. Donor sex in DDLT and LDLT**

Out of 573 DDLT, there were 401 (69.98%) male deceased donors and 172 female deceased donors (30.01%). Of 401 male deceased donors, 272 (67.8%) went to male recipients and 129 (32.1%) went to female recipients. Similarly of 172 female deceased donors, 86 (50%) were female recipients and 86 (50%) were male recipients.

In the LDLT group (n=210), 99 women donated their liver to 65 women (65.7%) and to 34 men (34.3%). Similarly, 111 men donated their liver to 72 women (64.9%) and 39 men (35.1%).