Live Donor Liver Transplantation With Older Donors Only Impacts on a Late HCV Recurrence

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Introduction

End-stage liver disease secondary to chronic hepatitis C virus (HCV) infection is the most common indication for liver transplantation (LT) worldwide. Unfortunately, HCV reinfection occurs universally after LT, and leads to graft cirrhosis in 10% to 30% of recipients within 3 to 5 years. Donor age has been the most consistently reported factor associated with impaired graft and patient survival in recurrent HCV after LT. Moreover, live donor liver transplantation (LDLT) has been also related to an accelerate HCV recurrence post-transplant because of increased hepatocellular proliferation. Therefore, several groups maintain that LDLT with donors older than 45 years should be avoided in HCV recipients. However, the impact of donor age on HCV recurrence in live LDLT recipients is controversial.

Objectives

- The aim of the present study is to report the short and long term outcome of HCV positive recipients after LDLT using grafts from donors ≥50 years old.
- We compared HCV progression in recipients receiving a graft from live donors ≥50 vs. < 50 years.
- Impact of live donor age on recipient HCV recurrence was assesed

Methods

- Case control study
- Retrospective analysis
- Prospectively collected data base
- April 2000 – May 2014
- *Inclusion criteria*:

a) Adult-to-adult right lobe LDLT

b) Recipients with HCV cirrhosis

- *Exclusion criteria*:

a) Left lobe grafts LDLT

b) LDLT in recipients non HCV positive

Study groups

HCV recipients undergoing LDLT with donors <50 years (n=128) vs. LDLT with donors ≥50 years (n=31)

Results

Recipients preoperative characteristics
LDLT<50y = LDLT≥50y

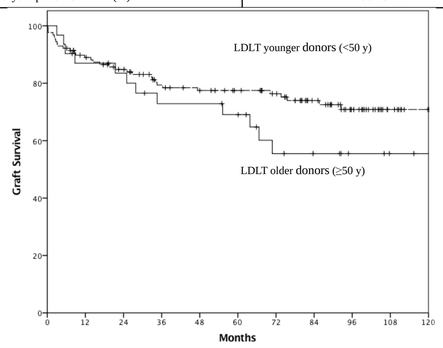
	Donor Age <50 n=128	Donor Age ≥50 n=31	p
Recipient Age (years)	55 (33-70)	55 (32-65)	0.18
Male sex (%)	94 (73)	23 (74)	1
BMI	27 (±5)	27 (±4)	0.6
MELD at Tx (without exeption points)	16 (±6)	15 (±5)	0.47
HCC (%)	63 (49)	13 (42)	0.54

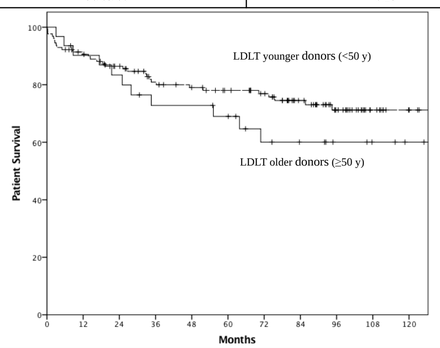
Donor and LDLT perioperative characteristics
LDLT<50y = LDLT≥50y

	Donor Age <50 n=128	Donor Age ≥50 n=31	p
Donor age (years)	29 (17-49)	54 (50-58)	0.0001
Donor male sex (%)	59 (46)	11 (35)	0.31
Donor BMI	27 (±5)	25 (±4)	0.101
Cold ischemia time (min)	88 (±42)	97 (±82)	0.44
Warm ischemia time (min)	55 (±20)	51 (±16)	0.53
H-Y (%)	50 (39)	11 (35)	0.83
Antibody induction (%)	100 (78)	23 (74)	0.637
Tacrolimus (%)	65 (51)	18 (58)	0.54

Recipients outcomes
LDLT<50y = LDLT≥50y

	Donor Age <50 n=128	Donor Age ≥50 n=31	p
AST peak (U/L)	533 (±381)	550 (±341)	0.81
ALT peak (U/L)	431 (±308)	423 (±280)	0.88
INR peak	2.56 (±1.15)	2.48 (±0.96)	0.26
Complications within 30 days (%)	54 (42)	10 (32)	0.41
Dindo-Clavien 3b,4,5 within 30 days (%)	28 (22)	8 (26)	0.63
Arterial thrombosis (%)	2 (2)	0	1
Biliary complications (%)	36 (30)	7 (23)	0.65
30-day mortality (%)	3 (2)	0	1
ICU stay (days) †	2 (0-95)	2 (0-25)	0.88
Hospital stay (days) †	12 (5-195)	16 (8-90)	0.41
Graft rejection (%)	32 (25)	5 (16)	0.35
Graft rejection within first year (%)	20 (16)	4 (13)	1
HCC recurrence (%) ***	8 (6)	1 (3)	1
Re-tx (%)	4 (3)	3 (10)	0.13
Re-tx within 1 year (%)	2 (2)	1 (3)	0.48
Follow up time (days)	2109 (5-4991)	1831 (90-4032)	0.89
1-/5-/10-year graft survival (%)	89/77/71	87/70/55	0.096
1-/5-/10-year patient survival (%)	90/78/71	90/69/60	0.25





Recipients HCV status post LDLT

	Donor Age <50 n=128	Donor Age ≥50 n=31	p
HCV recurrence (%)	72 (56)	22 (71)	0.15
HCV 1-year recurrence (≥F2) (%)	13 (10)	5 (16)	0.35
Graft fail due to HCV recurrence	7 (21)	8 (62)	0.002

Conclusions

- Overall LDLT in HCV recipient with donor's ≥50 years results in acceptable recipient outcome
- LDLT with older donors (≥50) for HCV patients resulted only in an increased late HCV recurrence. Graft and patient survival remained to be similar when receiving grafts from older vs younger donors.
- Late HCV recurrence only manifested itself after 5 years and did not impact on patient survival at 1-, 5-and 10-years.

The authors have no conflicts of interest to declare