

## HIV and comorbidities

### OC 61 HIV-to-HIV Organ Transplantation: A Comparative Analysis of Liver and Kidney Transplant Outcomes in People with HIV Receiving Organs from donors without HIV infection

#### Authors

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#### ABSTRACT

**Background:** This study aims to compare outcomes in people living with HIV (PWH) who received a liver transplant (LT) or kidney transplant (KT) from donors with HIV infection (D+/R+) versus those who underwent transplantation with organ from donors without HIV (D-/R+).

**Methods:** Retrospective study of PWH who underwent LT or KT at University Hospital in Modena from 2003 to 2024. Data collected included demographics, HIV-related characteristics, clinical and graft-related outcomes. Recipients were compared according to donor HIV serostatus, using Fisher exact test and Wilcoxon Mann Whitney test as appropriate. Kaplan-Meier curves were used to explore graft-related outcomes.

**Results:** Among 118 transplants in PWH, 8 were in the D+/R+ group (5 liver, 3 kidney; among those, 1 received a liver from a living donor) while 110 were in the D-/R+ group (77 liver, 27 kidney, 6 combined liver-kidney; among those, 2 received liver from living donors). All donors with HIV were on ART, all except two had undetectable viral load; most of them had past HBV or HCV co-infection. After transplant, one LT recipient experienced low-level viremia and one KT recipient had a viral blip (HIV RNA 247 cps/ml) after receiving graft from viraemic donor without emerging resistance mutations. Recipient characteristics stratified by donor HIV serostatus are reported in Table 1. Compared to the D-/R+ group, D+/R+ group had longer HIV duration (33 [IQR 17-37] vs 23 [IQR 6-38] years,  $p=0.014$ ), none had active HCV co-infection (0% vs 29%,  $p=0.067$ ). D+/R+ kidney recipients had a shorter dialysis duration (0.8 [IQR 0.8-1.2] vs 3.2 [IQR 0.61-11.9] years,  $p=0.016$ ). D+/R+ liver recipients had a lower MELD-Na score at transplant (10 [IQR 9-15] vs 17 [IQR 7-35],  $p=0.05$ ). At transplant, all recipients had HIV RNA < 50 cps/mL, with no significant difference in median CD4 cell count ( $p=0.610$ ). Recipient survival in D+ and D- was 75% and 66%, respectively, with a median follow-up of 2.5 and 3.7 years. The mortality incidence rate was 9.7 (95% CI 2.4-39.2) per 100 PYFU in D+/R+ vs 6.3 (95% CI 4.6-8.7) per 100 PYFU in D-/R+ ( $p=0.783$ ). Graft survival was 100% in D+ and 67% in D- recipients, evaluated at last available follow up (logrank=0.176) (Figure 1). Graft rejection occurred only in D-/R+ group (23%), with more frequency in kidney recipients as shown in Figure 2 (logrank=0.172).

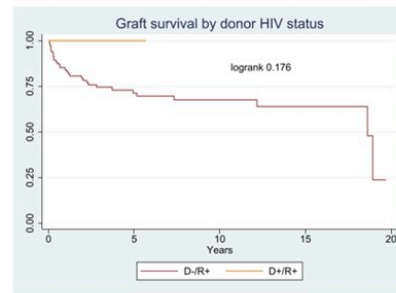
**Conclusions:** This study demonstrates that solid organ transplantation from donors with HIV is a feasible option for PWH, with comparable recipient and graft clinical outcomes to transplants from donors without HIV. Notably, D+/R+ recipients had no graft rejection events, shorter dialysis duration before KT, and lower MELD-Na scores at LT, suggesting they may have received transplants at an earlier disease stage. While overall survival and mortality rates were similar between groups, the 100% graft survival rate in the D+/R+ group, despite limited sample size, is a promising finding that warrants further investigation.

**Table 1.** Clinical Characteristics of Transplant Recipients Living with HIV Stratified by Donor HIV Serostatus.

	D+/R+ (n=8)	D-/R+ (n=110)	P value
<b>Recipient's characteristics</b>			
Age (years), median (IQR)	59.5 (54-69)	53 (38-65)	<b>0.011</b>
Female, n (%)	1 (12.5)	27 (24.6)	0.392
Italian, n (%)	7 (87.5)	102 (92.7)	0.481
BMI (Kg/m <sup>2</sup> ), median (IQR)	24.6 (21.6-28.3)	24.1 (18.6-31.1)	0.493
Positive Anti HCV, n (%)	5 (62.5)	80 (72.7)	0.396
Positive HCV RNA at Tx, n (%)	0	32 (29.1)	0.067
Positive HBsAg at Tx, n (%)	1 (12.5)	23 (20.9)	0.488
Positive antiHBe, n (%)	6 (75)	66 (79.5)	0.530
CD4 at Tx (cell/mm <sup>3</sup> ), median (IQR)	475 (117-1328)	341 (127-1154)	0.610
ART at Tx, n (%)			
Dual regimen	4 (50.0)	27 (24.8)	0.128
INSTI	8 (100)	66 (60.0)	<b>0.021</b>
NNRTI	0 (0)	18 (16.4)	0.254
PI	1 (12.5)	54 (49.1)	<b>0.047</b>
Waiting time in active list (days), median (IQR)	312 (45-621)	178 (2-1396)	0.313
Liver	102 (84-351)	330 (90-1221)	0.089
Kidney			
MELD-Na at Tx, median (IQR)	10 (9-15)	17 (7-35)	<b>0.050</b>
Time in dialysis (years), median (IQR)	0.8 (0.8-1.2)	3.2 (0.61-11.9)	<b>0.016</b>
<b>Donors' characteristics</b>			
Age (years), median (IQR)	51.5 (39-59)	56.5 (23-82)	0.321
Living donor, n (%)	1 (12.5)	2 (1.8)	<b>0.031</b>
Positive anti HCV, n (%)	3 (37.5)	4 (3.7)	<b>0.008</b>
Positive HBcAb, n (%)	6 (75.0)	20 (19.8)	<b>0.002</b>
<b>Outcomes</b>			
LOS (days), median (IQR)	11 (5-17)	17 (7-54)	0.076
Recipient survival	6 (75.0)	72 (65.5)	0.450
Graft survival	8 (100)	74 (67.3)	0.049
Graft rejection	0 (0)	27 (24.5)	0.116

Abbreviations: ART, antiretroviral therapy; BMI, body mass index; IQR, interquartile range; LOS, length of stay; Tx, transplant.

**Figure 1.** Graft survival according to donor HIV serostatus



**Figure 2.** Rejection-free survival according to donor HIV serostatus and transplanted organ

