



UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

**Registry of Transplant Recipients Annual Report:
Adult Liver Transplantation**

December 2023

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Figure 1: Number of transplants per year

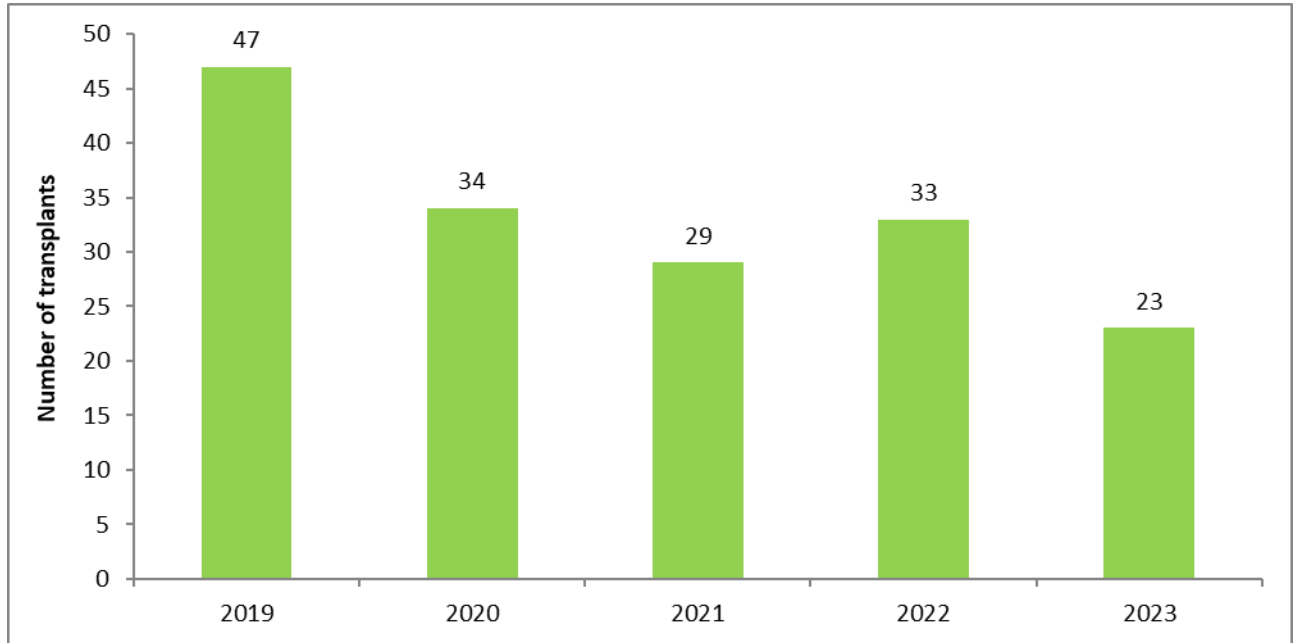


Table 1: Overview of transplants

	2019	2020	2021	2022	2023
Number of transplants	47	34	29	33	23
Donor type (n)					
Living donor transplants	1	7	12	7	1
Deceased donor transplants	46	27	17	26	22
<i>Whole liver</i>	44	26	17	25	20
<i>Split liver</i>	2	1	0	1	2

Table 2: Recipient characteristics

	2019	2020	2021	2022	2023
<i>Number of transplants</i>	47	34	29	33	23
Age (%)					
18-34 years	28	21	24	6	9
35-49 years	19	35	28	24	22
50-64 years	42	32	24	55	65
65 years or older	11	12	24	15	4
Gender (%)					
Male	45	59	59	42	48
Female	55	41	41	58	52
Ethnicity (%)					
Black	23	18	24	21	31
White	55	67	62	58	52
Indian	20	6	11	21	13
Mixed	2	9	3	0	4
Unknown	0	0	0	0	0
Primary Disease (%)					
Acute liver failure	13	9	10	9	4
ASH/NASH	21	15	24	39	22
Cholestatic	36	50	41	40	57
Hepatitis B	0	3	0	3	4
Hepatitis C	5	3	4	0	0
Metabolic	4	0	4	0	0
Malignancy	6	11	14	9	0
Other	15	9	3	0	13
Transplant history (%)					
First	93	97	100	88	96
Re-transplant	9	3	0	12	4
Blood type (%)					
A	26	23	28	46	35
B	15	21	17	12	22
AB	4	9	0	6	4
O	55	47	55	36	39
Wait time (%)					
< 31 days	45	35	34	34	30
31-60 days	21	12	7	12	4
61-90 days	6	3	10	12	9
3-< 6 months	13	29	21	18	26
6-< 12 months	4	18	7	15	13
1-< 2 years	11	3	18	6	9
2 years or more	0	0	3	3	9

Table 2: Recipient Characteristics (continued)

	2020	2021	2022	2022	2023
BMI (%)					
< 18.5 kg/m ²	0	4	6	6	4
18.5-< 25 kg/m ²	47	41	30	30	39
25-< 28 kg/m ²	23	17	34	34	13
28-< 30 kg/m ²	15	17	9	9	13
30-< 35 kg/m ²	6	21	18	18	31
>= 35 kg/m ²	9	0	3	3	0
Medical urgency (%)					
Status 1	9	10	10	10	4
MELD ≥ 35	3	0	0	0	0
MELD 30-34	3	0	0	0	0
MELD 15-29	38	55	45	45	57
MELD < 15	44	34	45	45	39
Unknown	3	0	0	0	0
Diabetes (%)	21	24	24	24	35

Table 3: Donor characteristics

	2019	2020	2021	2022	2023
<i>Number of transplants</i>	47	34	29	33	23
Blood type (%)					
A	34	35	14	42	43
B	13	15	17	12	9
AB	6	3	3	9	9
O	47	47	66	37	39
Donor Risk Index (cadaver donors) (%)					
<=1.00	0	0	0	0	0
1.01-1.40	28	26	18	12	5
1.41-1.60	11	18	18	4	9
1.61-1.80	22	15	12	11	23
1.81-2.00	11	11	23	23	14
>2.00	22	11	23	38	45
Unknown	6	19	6	12	4
Donor-recipient blood group compatibility (%)					
ABO incompatibility-major ¹	23	9	10	15	13

¹ A or B or AB to O; AB to A or B; A to B; B to A

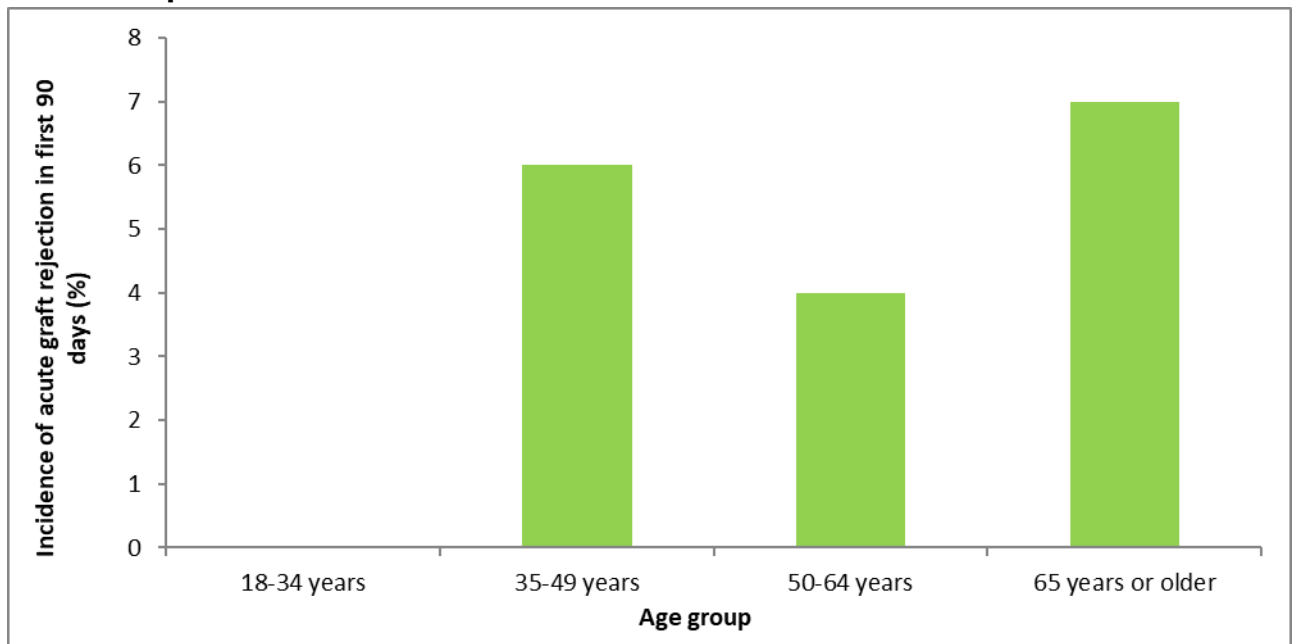
Table 4: Donor-Recipient serology matching (2023)

Donor / Recipient	CMV	Hep B core	Hep B surf. ant.	Hep C	HIV
D- / R-	-	78	48	100	96
D- / R+	26	9	18	-	-
D- / R unknown	-	5	-	-	-
D+ / R-	4	4	9	-	-
D+ / R+	61	-	-	-	-
D+ / R unknown	-	-	4	-	-
D unknown / R-	-	4	17	-	4
D unknown / R+	9	-	4	-	-
D unknown / R unknown	-	-	-	-	-

Table 5: Transplant characteristics

	2019	2020	2021	2022	2023
<i>Number of transplants</i>	47	34	29	33	23
Procedure Type (%)					
Liver alone	98	97	97	97	87
Liver and another organ	2	3	3	3	13
Median days in hospital after transplant (Liver alone transplants; excl. deaths pre discharge)	16	12	16	16	21

Figure 2: Incidence of biopsy-proven acute graft rejection in the first 90 days after transplant



These data are based on funded healthcare sector transplants carried out in the 2.5 years prior to the last 12 months of follow-up, i.e. patients transplanted between 1 Jul 2020 and 31 Dec 2022.

Table 6: Survival

	Patient		Graft	
	Unadjusted	Risk-adjusted	Unadjusted	Risk-adjusted
1-month survival				
<i>Number of transplants</i>		68		68
Survival estimate (%) (95% CI)	91 (81-96)	89 (79-94)	91 (81-96)	88 (79-94)
1-year survival				
<i>Number of transplants</i>		68		68
Survival estimate (%) (95% CI)	75 (65-84)	78 (67-87)	73 (61-82)	77 (64-86)
3-year survival:				
<i>Number of transplants</i>		99		99
Survival estimate (%) (95% CI)	70 (60-78)	70 (60-78)	69 (59-77)	69 (59-77)

All survival estimates are for first transplants and all causes of end-stage liver disease. One-month and one-year patient and graft survival estimates are based on transplants carried out in the 2.5 years prior to the last 12 months of follow-up, i.e. patients transplanted between 1 Jul 2020 and 31 Dec 2022. Three-year patient and graft survival estimates are based on transplants carried out in the 2.5 years prior to the last 3 years of follow-up, i.e. patients transplanted between 1 Jul 2018 and 31 Dec 2020. Risk-adjusted estimates are based on the observed vs estimated deaths (or graft failures) using a model based on transplant number, chronic vs acute liver failure, recipient age and gender. The 3-year survival curves are shown in Appendix A.

Table 7: 1-year survival by selected groups

	Survival (%) (95%CI)	
	Patient	Graft
Age:		
18-34y	82 (45-95)	82 (45-95)
35-49y	89 (64-97)	84 (59-95)
50-64y	71 (48-85)	71 (48-85)
65y+	57 (28-78)	57 (28-78)
Acute rejection in the first 90 days:		
No	74 (61-83)	72 (59-82)
Yes	Not estimable (no rejections)	

All survival estimates are for are for first transplants and all causes of end-stage liver disease, based on transplants carried out in the 2.5 years prior to the last 12 months of follow-up, i.e. patients transplanted between 1 Jul 2020 and 31 Dec 2022. There were no statistically significant differences in survival between any of the groups. The survival curves are shown in Appendix B.

Table 8: Characteristics of adult liver transplant candidates on the waiting list on 31 December

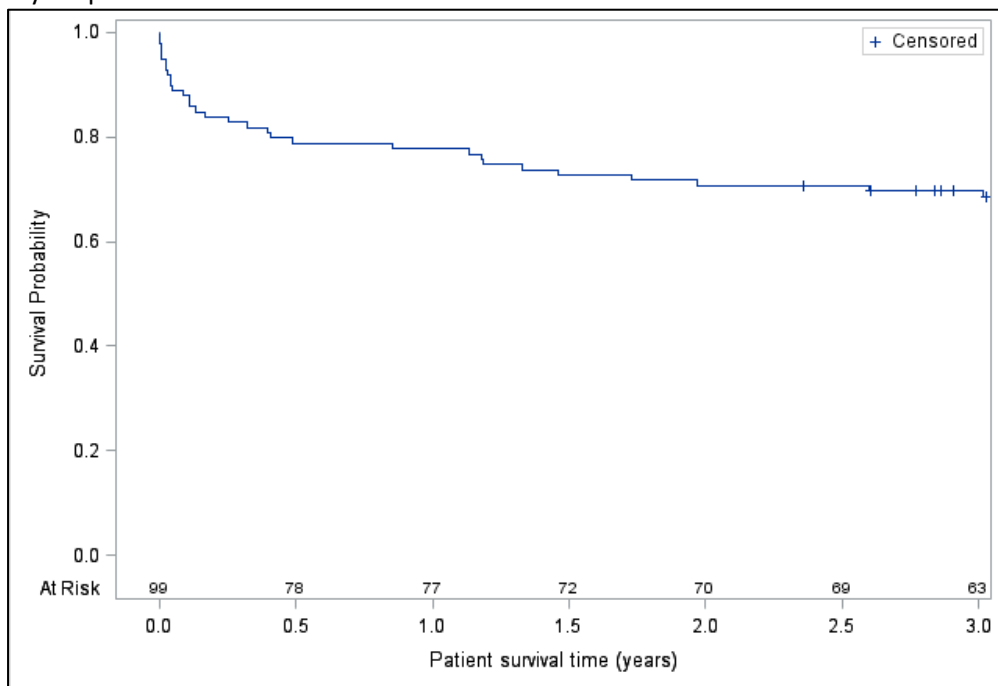
	2019	2020	2021	2022	2023
<i>Number of patients</i>	32	28	33	50	56
Age (%)					
18-34 years	28	11	21	16	21
35-49 years	28	25	30	28	33
50-64 years	38	43	43	46	33
65 years or older	6	21	6	10	13
Gender (%)					
Male	59	43	48	44	48
Female	41	57	52	56	50
Unknown	-	-	-	-	2
Ethnicity (%)					
Black	28	36	39	36	43
White	47	50	46	52	38
Indian	13	14	12	8	13
Mixed	9	-	3	2	2
Unknown	3	-	-	2	4
Diagnosis of liver failure (%)					
Acute liver failure	-	7	6	4	4
ASH/NASH	22	39	36	36	36
Cholestatic	50	39	40	34	41
Hepatitis B	3	-	3	2	2
Hepatitis C	-	-	-	-	-
Metabolic	3	4	3	-	-
Malignancy	6	4	6	4	5
Other	13	7	6	18	9
Unknown chronic	3	-	-	2	3
Medical urgency (%)					
Status 1	19	0	0	0	0
MELD ≥ 35	-	-	-	-	-
MELD 30-34	-	-	-	-	-
MELD 15-29	-	-	-	-	-
MELD < 15	81	100	100	100	98
Unknown	-	-	-	-	2
Wait time (%)					
< 1 year	72	57	55	52	34
1-< 2 years	19	21	27	22	29
2-< 3 years	6	18	12	16	14
3-< 4 years	3	4	6	10	23
4-< 5 years	-	-	-	-	-
≥ 5 years	-	-	-	-	-

Table 9: Outcome 1 year after listing, of liver transplant candidates

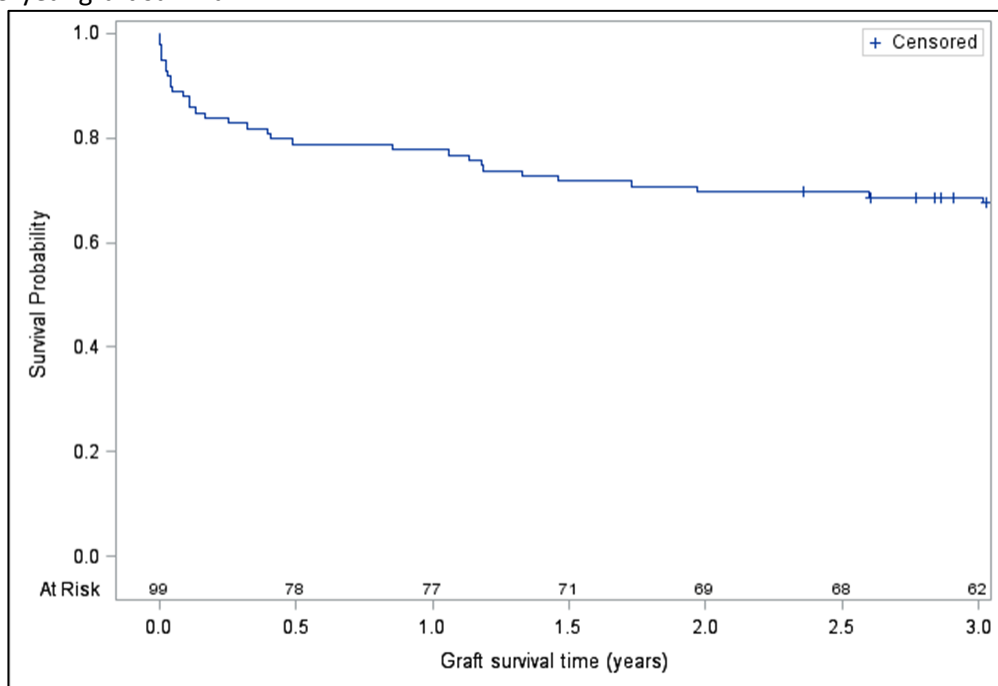
	2018	2019	2020	2021	2022
Patients listed during year	61	66	51	46	55
Status at 1 year after listing (%)					
Transplanted	62	73	49	65	58
Patient died	13	11	25	9	9
Removed from list (for reasons other than death or transplant)	10	8	2	0	2
Still waiting for transplant	15	9	24	26	31

Appendix A:

3-year patient survival:

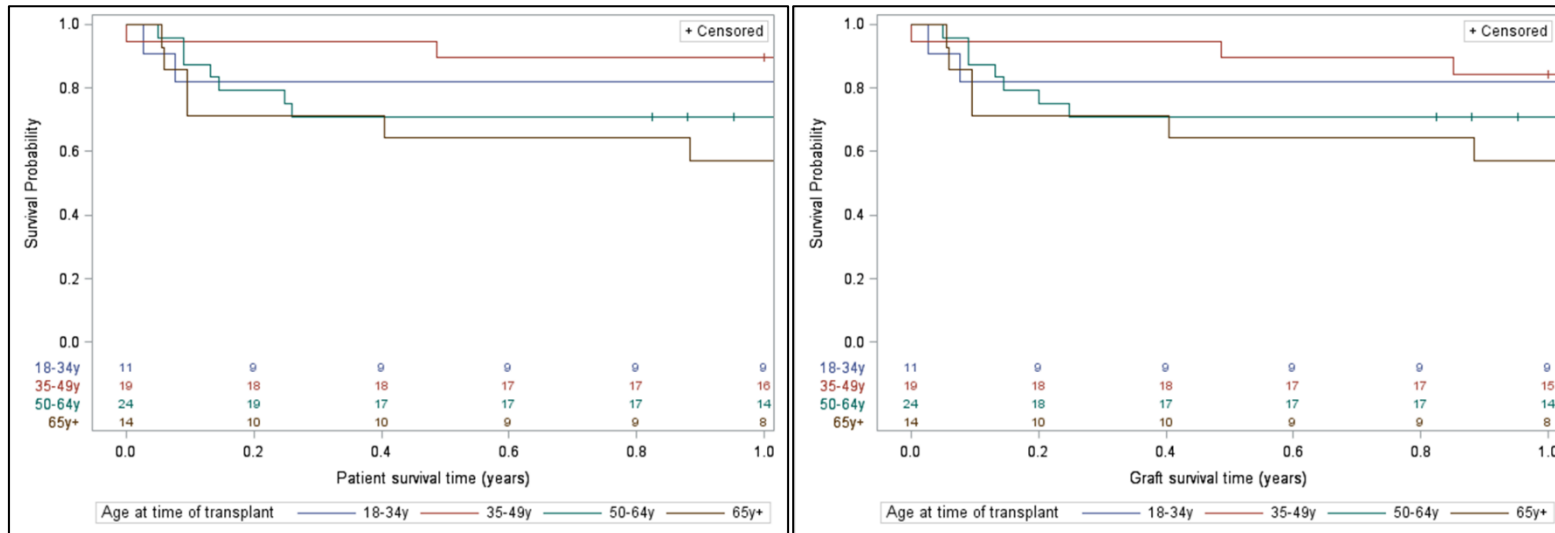


3-year graft survival:



Appendix B:

1-year patient and graft survival by age group:



1-year patient and graft survival by acute rejection in the first 90 days:

