

Chapter 5

RENAL TRANSPLANTATION

Stock and Flow

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Death after Transplantation and Graft Failure

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Survival Analysis

Work related Rehabilitation and Quality of Life

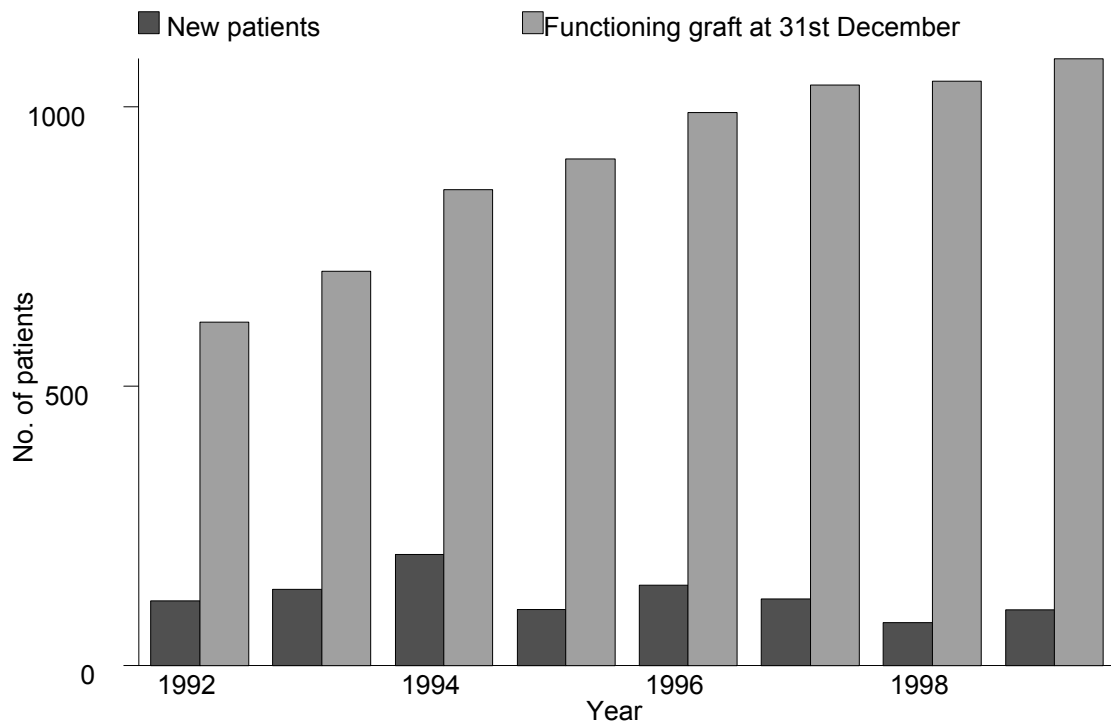
5. RENAL TRANSPLANTATION

5.1 STOCK AND FLOW

Table 5.01 Stock and Flow of Transplant Patients, 1992 - 1999

Year	1992	1993	1994	1995	1996	1997	1998	1999
New transplant patients	115	136	199	100	144	119	77	99
Died	16	19	27	15	29	27	23	23
Returned to dialysis	19	24	21	28	28	39	44	34
Lost to Follow Up	2	2	5	2	3	4	3	2
Functioning graft at 31st December	614	705	851	906	990	1039	1046	1086

Figure 5.01: Stock and Flow Renal Transplant Patients, 1992 - 1999



5.2 PLACE AND TYPE OF RENAL TRANSPLANTS

Table 5.02: Place of Renal Transplantation, 1992- 1999

Year	1992		1993		1994		1995	
	No.	%	No.	%	No.	%	No.	%
HKL	31	27	36	26	33	17	36	36
UH	4	3	3	2	5	3	9	9
Other local	4	3	0	0	0	0	0	0
India	73	63	83	61	139	70	22	22
China	2	2	12	9	21	11	32	32
Other overseas	1	1	2	1	1	1	1	1
Total	115	100	136	100	199	100	100	100
Year	1996		1997		1998		1999	
	No.	%	No.	%	No.	%	No.	%
HKL	33	23	29	24	33	43	35	35
UH	5	3	6	5	5	6	9	9
Other local	0	0	0	0	0	0	1	1
India	5	3	7	6	3	4	5	5
China	100	69	75	63	35	45	49	49
Other overseas	1	1	2	2	1	1	0	0
Total	144	100	119	100	77	100	99	100

Table 5.03: Type of Renal Transplantation, 1992- 1999

Year	1992		1993		1994		1995	
	No.	%	No.	%	No.	%	No.	%
Commercial Cadaver	2	2	12	9	21	11	32	32
Commercial Live donor	72	63	82	60	138	69	19	19
Live donor Cadaver	37	32	39	29	38	19	44	44
	4	3	2	1	2	1	5	5
Total	115	100	136	100	199	100	100	100
Year	1996		1997		1998		1999	
	No.	%	No.	%	No.	%	No.	%
Commercial Cadaver	100	69	75	63	35	45	46	46
Commercial Live donor	4	3	7	6	3	4	3	3
Live donor Cadaver	38	26	29	24	24	31	37	37
	2	1	8	7	15	19	10	10
Total	144	100	119	100	77	100	99	100

5.3. DEATH AFTER TRANSPLANTATION AND GRAFT FAILURE

Table 5.04: Transplant Patients Death Rate and Graft Loss, 1992 - 1999

Year	1992	1993	1994	1995	1996	1997	1998	1999
No. at risk	614	660	778	879	948	1015	1043	1066
Transplant death	16	19	27	15	29	27	23	23
Transplant death rate %	3	3	3	2	3	3	2	2
Graft loss	19	24	21	28	28	39	44	34
Graft loss %	3	4	3	3	3	4	4	3
All losses	35	43	48	43	57	66	67	57
All losses rate %	6	7	6	5	6	7	6	5

Figure 5.04: Transplant Recipient Death Rate, 1992 - 1999

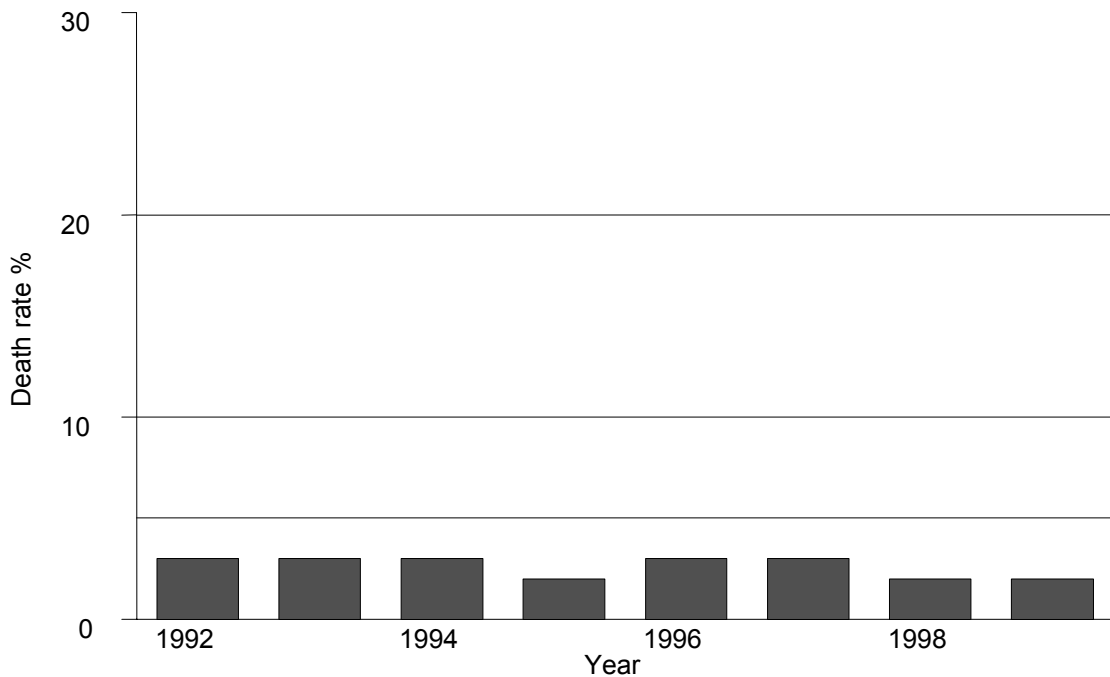


Table 5.05 Causes of Death in Transplant Recipients 1996– 1999

Year	1996		1997		1998		1999	
	No	%	No	%	No	%	No	%
Cardiovascular	4	14	3	11	3	13	2	9
Died at home	3	10	2	7	4	17	3	13
Sepsis	17	59	13	48	7	30	7	30
GIT bleeding	0	0	0	0	2	9	1	4
Cancer	2	7	0	0	3	13	3	13
Liver disease	2	7	2	7	1	4	1	4
Others	1	3	3	11	1	4	3	13
Unknown	0	0	4	15	2	9	3	13
Total no.	29	100	27	100	23	100	23	100

Table 5.06: Causes of Graft Failure, 1996 - 1999

Year	1996		1997		1998		1999	
	No.	%	No.	%	No.	%	No.	%
Rejection	13	46	20	51	22	50	22	65
Cyclosporine/ drug toxicity	0	0	0	0	0	0	0	0
Ureteric obstruction	0	0	0	0	0	0	0	0
Vascular causes(stenosis / thrombosis)	1	4	4	10	1	2	1	3
Renal disease, recurrent/de novo	2	7	1	3	1	2	0	0
Technical complication	0	0	0	0	0	0	0	0
Others	0	0	4	10	4	9	0	0
Unknown	12	43	10	26	16	36	11	32
Total no.	28	100	39	100	44	100	34	100

5.4 CENTRES OF FOLLOW-UP

Table 5.07: Distribution of Centres of Follow-up of Transplant Recipients, 1999

No	Centre	No	Percent
0	No.with functioning graft at at 31st December	1086	100
1	Alor Setar Hospital	6	1
2	Ampang Puteri	1	0
3	Assunta Hospital	2	0
4	Batu Pahat Hospital	7	1
5	Bintulu Hospital	2	0
6	Damai Medical	1	0
7	Dutches of Kent Hospital	4	0
8	HTAA, Kuantan	17	2
9	Healthcare Dialysis (PJ)	11	1
10	Ipoh Hospital	36	3
11	Kangar Hospital	1	0
12	Kluang Hospital	3	0
13	Kota Bharu Hospital	1	0
14	Kuala Lumpur Hospital	326	30
15	Kuala Terengganu Hospital	5	0
16	Kuching Hospital	42	4
17	Labuan Hospital	1	0
18	Mahkota Medical	27	2
19	Melaka Hospital	19	2
20	Menon SJMC	24	2
21	Miri Hospital	16	1
22	Muar Hospital	7	1
23	Pantai Mutiara	1	0
24	Pulau Pinang Hospital	155	14
25	Queen Elizabeth Hospital	39	4
26	Renal Healthcare (KL)	2	0
27	Selangor Medical	1	0
28	Selayang Hospital	5	0
29	Seremban Hospital	28	3
30	Sibu Hospital	21	2
31	Sultanah Aminah Hospital	141	13
32	Tawakal Hospital	13	1
33	Tawau Hospital	5	0
34	Tg Ampuan Rahimah	14	1
35	Timberland Medical	29	3
36	USM Hospital	2	0
37	University Hospital	71	7

5.5 TRANSPLANT RECIPIENTS' CHARACTERISTICS

Table 5.08: Percentage Age Distribution of transplant recipients, 1996 – 1999

Year	1996	1997	1998	1999
New transplant patients	144	119	77	99
1-14 years	2	6	5	6
15-24 years	9	17	6	11
25-34 years	26	24	32	27
35-44 years	34	31	30	31
45-54 years	22	18	22	17
55-64 years	6	3	4	7
≥65 years	0	2	0	0
Functioning graft at 31st December	990	1039	1046	1086
1-14 years	2	3	3	3
15-24 years	15	15	14	14
25-34 years	34	32	32	31
35-44 years	30	31	31	31
45-54 years	15	15	16	15
55-64 years	5	5	4	4
≥65 years	0	0	0	0

Table 5.09: Renal Transplant Recipients' Characteristics, 1996 - 1999

Year	1996	1997	1998	1999
New transplant patients	144	119	77	99
Mean age \pm sd	38 \pm 11	35 \pm 12	36 \pm 11	36 \pm 13
% male	56	66	57	61
% Diabetic	8	10	9	12
% HBsAg+	11	5	5	4
% Anti-HCV+	15	4	17	10

5.6 SURVIVAL ANALYSIS

**Table 5.10: Transplant Patient Survival related to Year of Transplant
1994 – 1999**

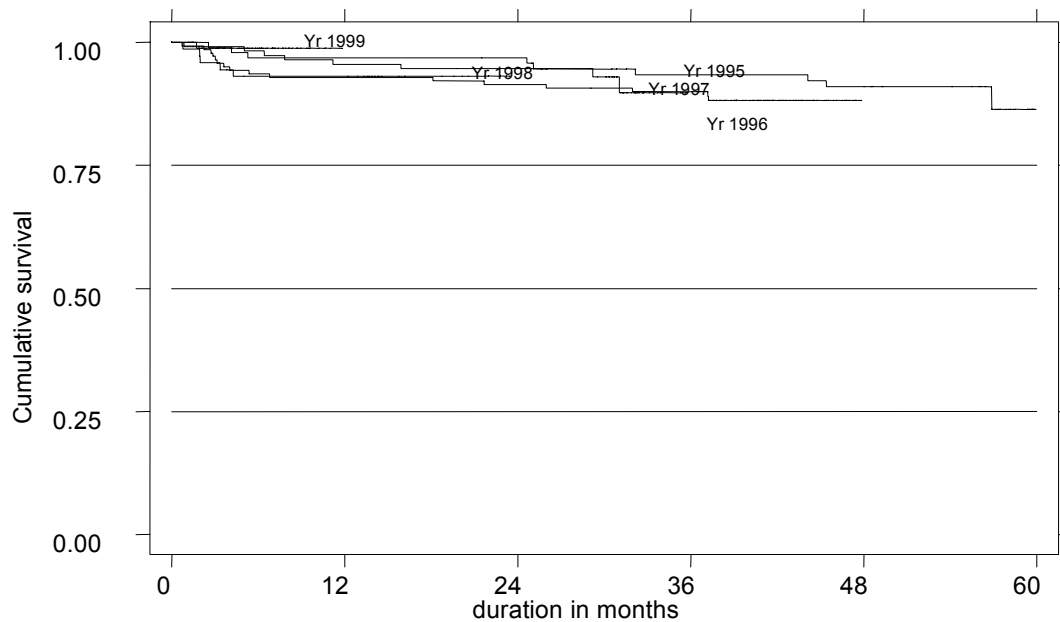
Year	1994			1995			1996		
Interval (months)	% survival	SE	No	% survival	SE	No	% survival	SE	No
6	96	1	185	97	2	92	93	2	132
12	95	2	182	97	2	91	93	2	130
24	93	2	176	96	2	88	91	2	126
36	91	2	167	93	3	79	90	3	105
48	90	2	156	91	3	63			
60	89	2	110						

Year	1997			1998			1999		
Interval (months)	% survival	SE	No	% survival	SE	No	% survival	SE	No
6	98	1	111	93	3		99	1	
12	95	2	108	93	3				
24	95	2	76						

No. = number at risk

SE = standard error

Figure 5.10: Transplant Patient Survival by Year of Transplant 1995 – 1999
Kaplan-Meier survival estimates, by Year



**Table 5.11: Transplant Allograft Survival related to Year of Transplant
1994 – 1999**

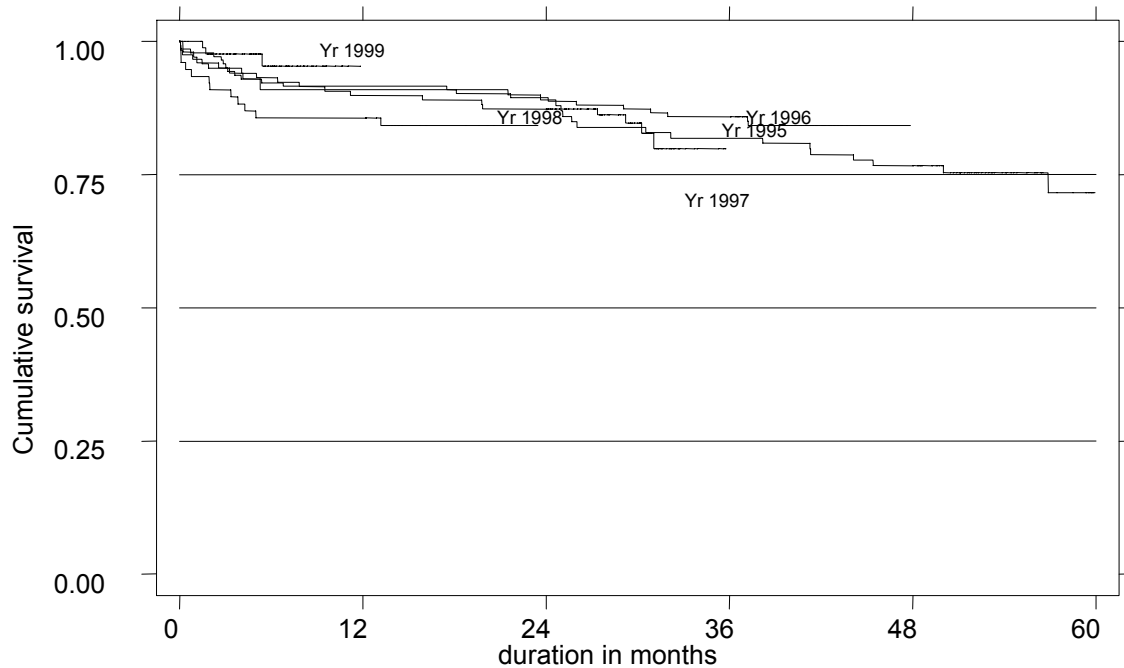
Year	1994			1995			1996		
Interval (months)	% survival	SE	No	% survival	SE	No	% survival	SE	No
6	93	2	185	91	3	92	92	2	132
12	92	2	182	91	3	91	91	2	130
24	89	2	176	89	3	89	89	3	126
36	84	3	167	81	4	79	86	3	105
48	78	3	156	77	4	66			
60	74	3	136						

Year	1997			1998			1999		
Interval (months)	% survival	SE	No	% survival	SE	No	% survival	SE	No
6	93	2	111	86	4	66	95	3	
12	90	3	108	86	4	61			
24	87	3	90						

No. = number at risk

SE = standard error

Figure 5.11: Transplant Allograft Survival by Year of Transplant, 1995-1999
Kaplan-Meier survival estimates, by Year



5.7 WORK RELATED REHABILITATION AND QUALITY OF LIFE IN TRANSPLANT RECIPIENTS

Table 5.12: Work Related Rehabilitation in Transplant Recipients, 1996 - 1999

REHABILITATION STATUS	1996		1997		1998		1999	
	No.	%	No.	%	No.	%	No.	%
Full time work for pay	457	64	492	62	420	68	543	62
Part time work for pay	83	12	77	10	36	6	62	7
Able to work but unable to get a job	15	2	20	3	20	3	8	1
Able to work but not yet due to dialysis schedule	1	0	1	0	0	0	0	0
Able but disinclined to work	4	1	9	1	10	2	6	1
Home maker	94	13	128	16	94	15	175	20
Full time student	19	3	18	2	14	2	32	4
Age<15 years	0	0	5	1	3	0	3	0
Retired	11	2	14	2	10	2	32	4
Age>65 years	5	1	7	1	6	1	7	1
Unable to work due to poor health	20	3	20	3	9	1	11	1
Total	709	100	791	100	622	100	879	100

Table 5.13: Quality of Life, Transplant recipients, 1996 – 1999

QOL Index Summated Score	1996		1997		1998		1999	
	No.	%	No.	%	No.	%	No.	%
0 (Worst QOL)	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0
2	2	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0	0
4	4	1	2	0	1	0	0	0
5	7	1	2	0	0	0	1	0
6	10	1	10	1	5	1	4	0
7	19	3	11	1	9	2	8	1
8	40	6	18	2	11	2	5	1
9	45	6	24	3	31	5	9	1
10 (Best QOL)	588	82	728	92	532	90	853	97
Total	716	100	795	100	589	100	880	100