

CHAPTER 6

HOMOGRAFT - HEART VALVE TRANSPLANTATION

Editor:

Mr. Mohamed Ezani Hj Md Taib

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6.0 INTRODUCTION

The Homograft unit in Institut Jantung Negara (IJN) was established in 1995. This was in response to the rising need for homografts and also the rising cost of importing homografts from overseas. The team comprises of surgeons and medical technicians who are involved in retrieving, processing and cryopreserving the homografts for storage. They maintain a detailed record of each homograft obtained and utilised.

Valvular homografts are used routinely in cardiac surgery especially for patients with congenital valvular heart disease. They are used as biological conduits to replace absent valves or to reconstruct outflow tracks in the heart. Homografts are superior to artificial valves due to their inherent traits such as superior perfusion parameters, durability, ease of handling and reduced risk of thrombo-embolic phenomenon. This removes the need for tight anticoagulation treatment post operatively and is extremely convenient for children and women of childbearing age in whom anticoagulation is contraindicated. Homografts have inherent resistance to infection and are preferred in an environment where sepsis is of concern.

The continued efforts by the Ministry of Health in promoting organ and tissue donation have helped to improve the availability of homografts in the country. The efficient and better streamlining of organisation structure has improved networking between various hospitals and transplant units with better public and medical staff awareness.

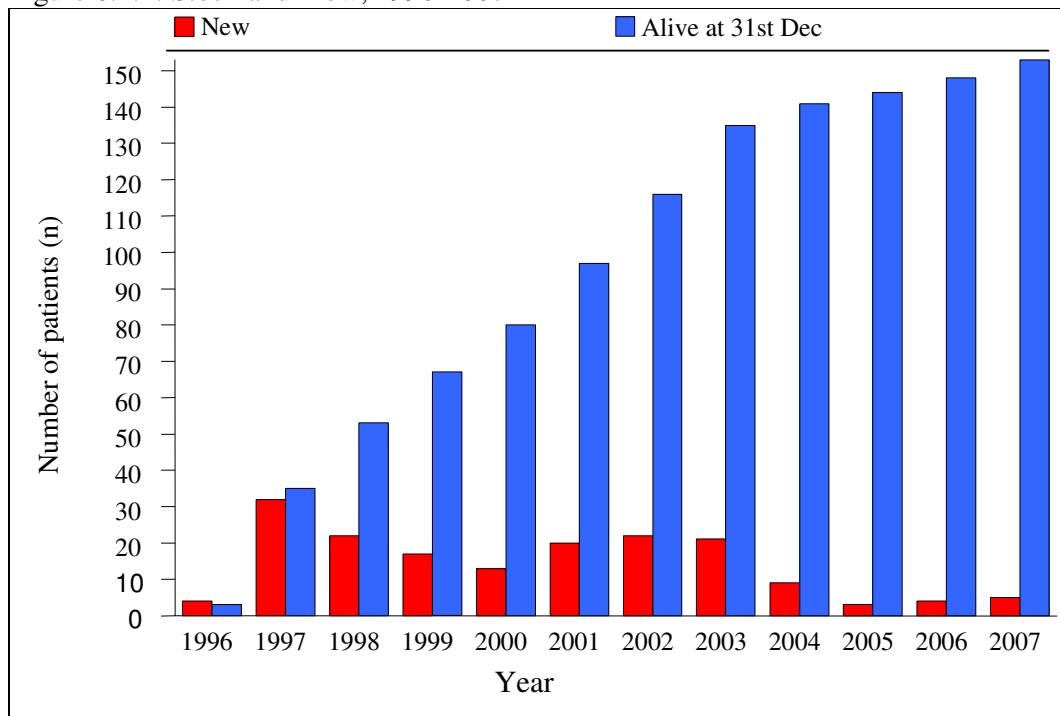
6.1 STOCK AND FLOW

Table 6.1.1: Stock and Flow, 1996-2007

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
New transplant	4	32	22	17	13	20	22	21	9	3	4	5
Deaths*	1	0	4	3	0	3	3	2	3	0	0	0
Lost to follow up	0	0	0	0	0	0	0	0	0	0	0	0
Alive with functioning graft at 31 st December	3	35	53	67	80	97	116	135	141	144	148	153

*based on year of death

Figure 6.1.1: Stock and Flow, 1996-2007



6.2 RECIPIENTS' CHARACTERISTICS

Table 6.2.1: Distribution of Patients by Gender, 1996-2007

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	TOTAL
Gender	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Male	2	19	9	9	10	6	9	14	3	0	4	2	87
Female	2	13	13	8	3	14	13	7	6	3	0	3	85
TOTAL	4	32	22	17	13	20	22	21	9	3	4	5	172

Figure 6.2.1: Distribution of Patients by Gender, 1996-2007

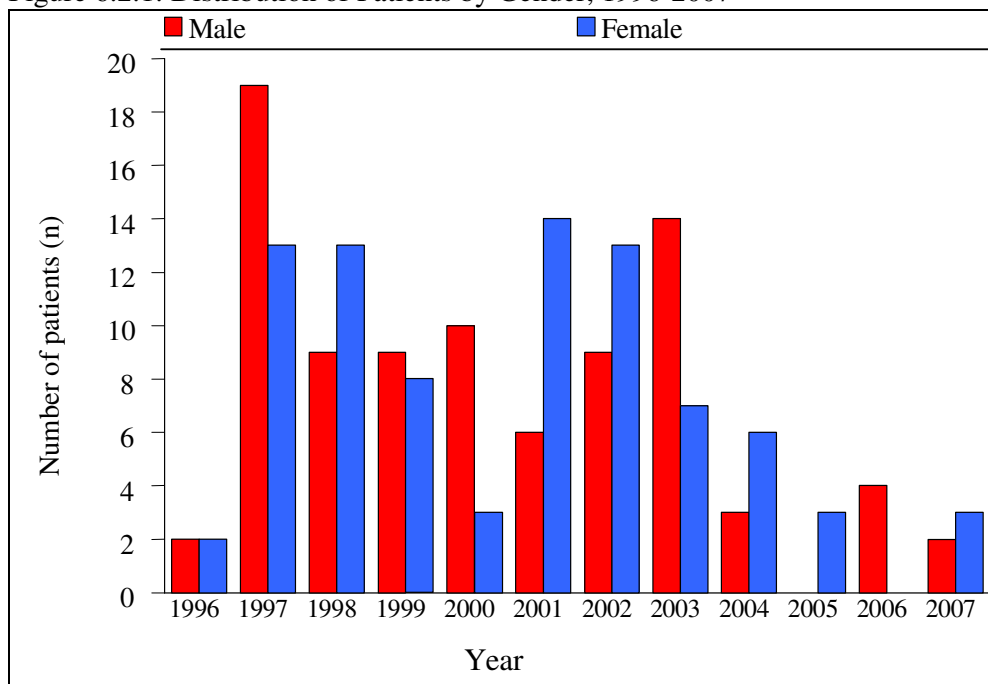


Table 6.2.2: Distribution of Patients by Ethnic Group, 1996-2007

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	TOTAL
Ethnic group	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Malay	1	19	15	9	9	10	16	12	6	3	2	3	105
Chinese	3	11	4	3	2	9	4	6	1	0	1	0	44
Indian	0	2	2	2	0	1	2	2	1	0	1	0	13
Others	0	0	1	3	2	0	0	1	1	0	0	2	10
TOTAL	4	32	22	17	13	20	22	21	9	3	4	5	172

Figure 6.2.2: Distribution of Patients by Ethnic Group, 1996-2007

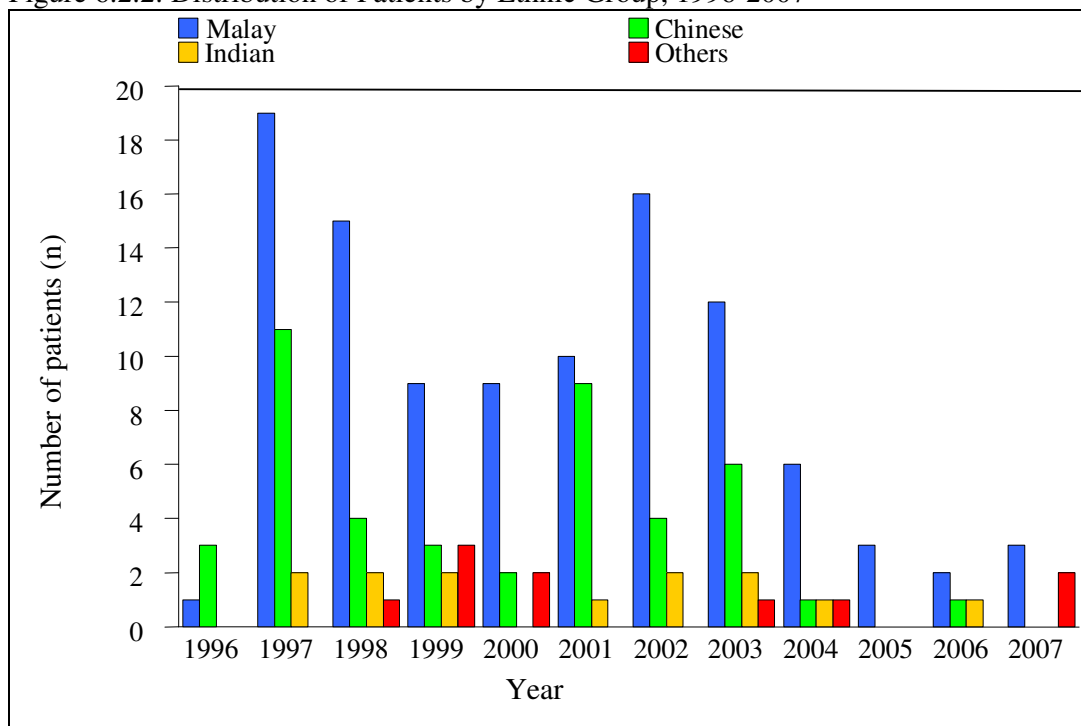
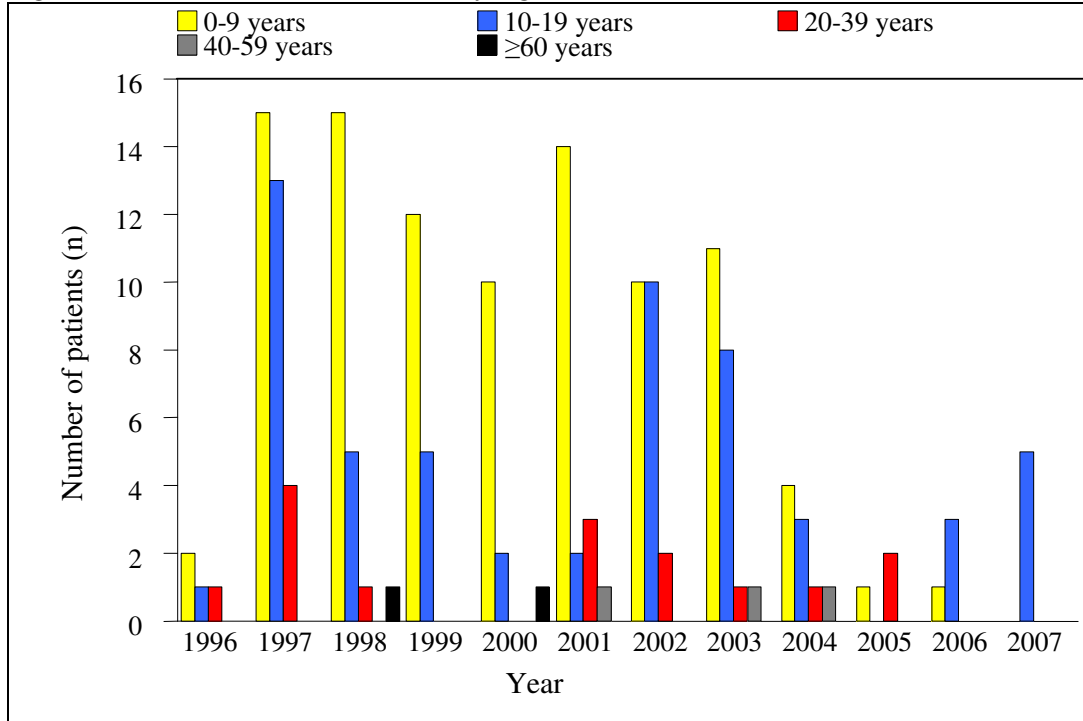


Table 6.2.3: Distribution of Patients by Age, 1996-2007

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	TOTAL
Age group	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
0-9	2	15	15	12	10	14	10	11	4	1	1	0	95
10-19	1	13	5	5	2	2	10	8	3	0	3	5	57
20-39	1	4	1	0	0	3	2	1	1	2	0	0	15
40-59	0	0	0	0	0	1	0	1	1	0	0	0	3
≥60	0	0	1	0	1	0	0	0	0	0	0	0	2
TOTAL	4	32	22	17	13	20	22	21	9	3	4	5	172
Mean	12	11	11	7	12	11	10	12	15	15	10	11	11
SD	7	7	15	4	17	14	6	11	11	8	3	0	10
Median	11	10	8	7	8	5	10	9	10	20	11	11	10
Min		3	3			5							3
Max	5	months	months	1	2	months	3	2	5	6	6	11	months
Max	21	30	70	17	67	53	28	53	42	20	11	11	70

* Age=date of implantation – date birth

Figure 6.2.3: Distribution of Patients by Age, 1996-2007



6.3 TRANSPLANT PRACTICES

6.3.1 Donor Details

Table 6.3.1: Number of Valves Harvested by Type of Homograft, 1996-2007

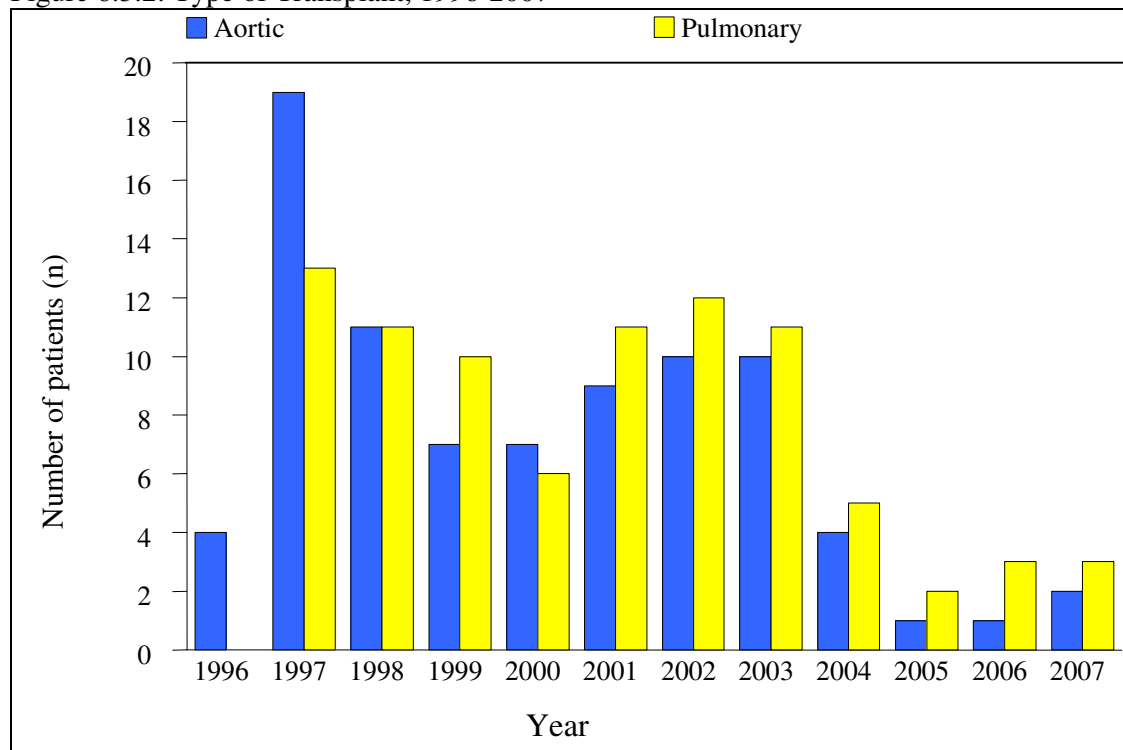
Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	TOTAL
Type of homograft	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Aortic	8	17	10	8	11	14	10	8	7	4	15	9	121
Pulmonary	1	14	11	10	12	12	14	9	8	5	15	8	119
TOTAL	9	31	21	18	23	26	24	17	15	9	30	17	240

6.3.2 Transplant Details

Table 6.3.2: Type of Transplant, 1996-2007

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	TOTAL
Type of transplant	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Aortic	4	19	11	7	7	9	10	10	4	1	1	2	85
Pulmonary	0	13	11	10	6	11	12	11	5	2	3	3	87
TOTAL	4	32	22	17	13	20	22	21	9	3	4	5	172

Figure 6.3.2: Type of Transplant, 1996-2007



6.4 TRANSPLANT OUTCOMES

Table 6.4.1: Patient Survival by Gender, 1996-2007

Gender	Male		Female	
	% Survival	SE	% Survival	SE
1	91	3	93	3
3	89	4	91	3
5	89	4	91	3

SE=standard error

Figure 6.4.1: Patient Survival by Gender, 1996-2007

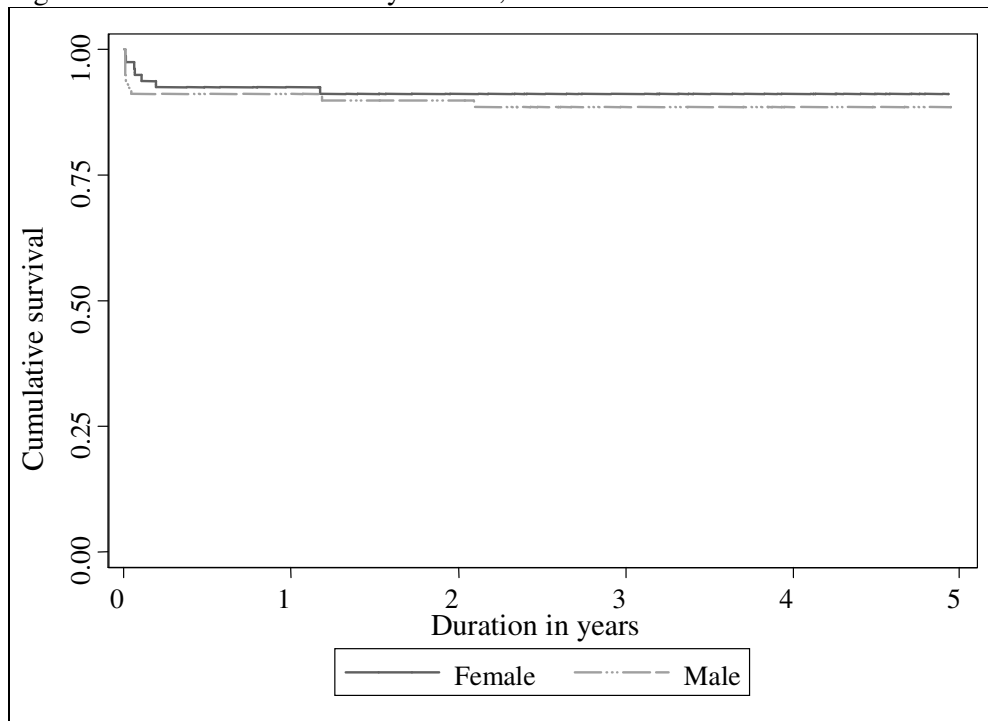


Table 6.4.2: Patient Survival by Age Group, 1996-2007

Age group	0-9 years		10-19 years		≥20 years	
Interval (months)	% Survival	SE	% Survival	SE	% Survival	SE
1	89	3	96	3	95	5
3	88	3	92	4	95	5
5	88	3	92	4	95	5

SE=standard error

Figure 6.4.2: Patient Survival by Age Group, 1996-2007



Table 6.4.3: Patient Survival by Type of Homograft, 1996-2007

Type of homograft Interval (years)	Aortic		Pulmonary	
	% Survival	SE	% Survival	SE
1	93	3	91	3
3	89	4	91	3
5	89	4	91	3

SE=standard error

Figure 6.4.3: Patient Survival by Type of Homograft, 1996-2007

