

LIVER
TRANSPLANTATION
IN
AUSTRALIA

TO 31/12/1992

The 5th Report
from
The Combined Australian Liver Transplant Registries
of
The National Liver Transplant Centres
Brisbane, Melbourne, Sydney.

JUNE 1993.

Introduction

This, the fifth annual report of the combined Liver Transplant Registries, has been compiled by the Queensland Liver Transplant Service. Data from programmes in Adelaide, Brisbane, Melbourne, Perth and Sydney have been included in order to present completely an analysis of hepatic transplantation activity in Australia.

Individual patient confidentiality is assured and in general, comparisons between programmes has been avoided. Copies of this report are held by the Programme Directors to whom requests for additional copies may be made.

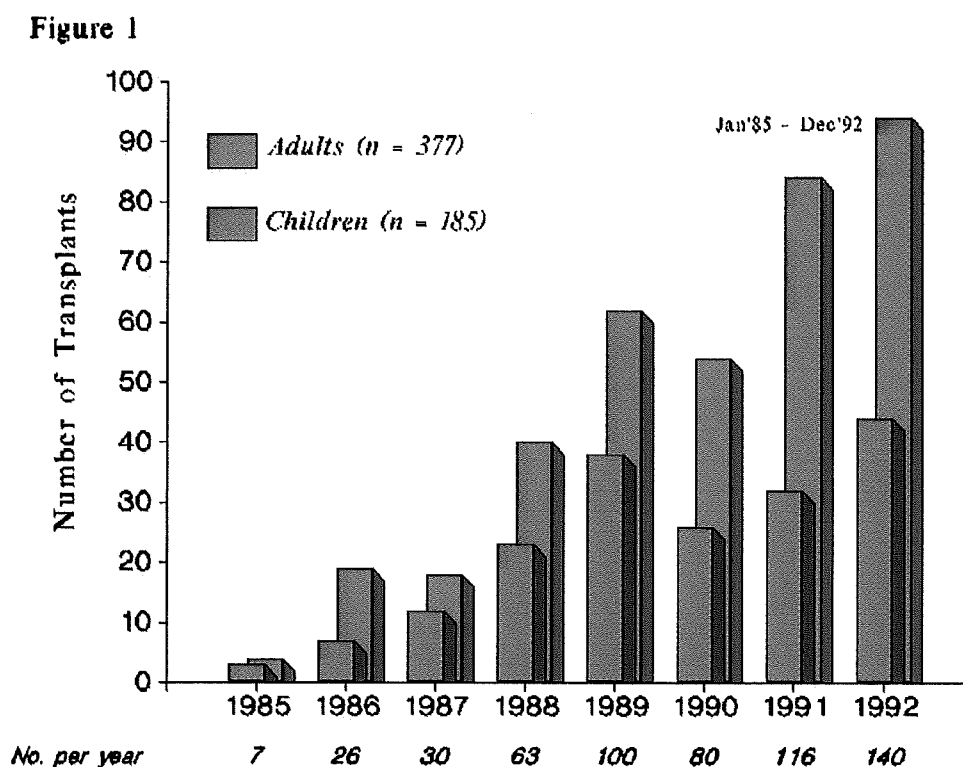
We have closely followed the format of previous reports with updated tables and graphs. New trends have been highlighted and analyses added.

By mutual consent responsibility for the annual production of the registry report rotates periodically between programmes.

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One hundred and forty transplants were performed in 1992, 96 in adults and 44 in children. This brings to 562 the total number of liver transplants performed in Australia since January 1985. (Figure 1)

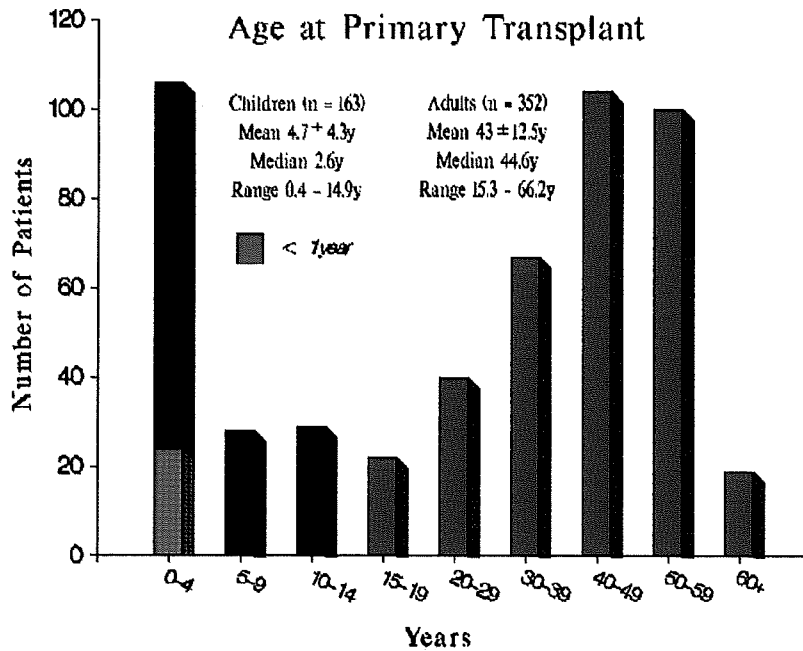


Fifty-three percent of adult recipients and 59% of paediatric recipients were female. Forty-four patients required a second transplant and one patient received 3 grafts. The overall retransplant rate was 8.5% (Table 1)

Table 1

	Adults	Children
Sex		
Female	53%	59%
Male	47%	41%
Graft Number		
1	354	163
2	22	22
3	1	

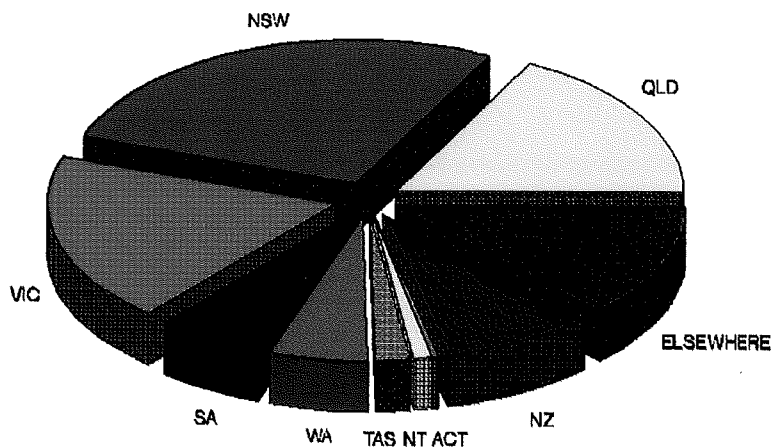
Figure 2



The age distribution was bimodal reflecting the primary disease for which transplantation was performed. In children biliary atresia was predominant. In adults chronic liver disease was usually manifest in the fifth decade. Twenty-three children less than 1 year of age and 19 adults in their sixties were transplanted.

Figure 3

Origin of Patients Transplanted

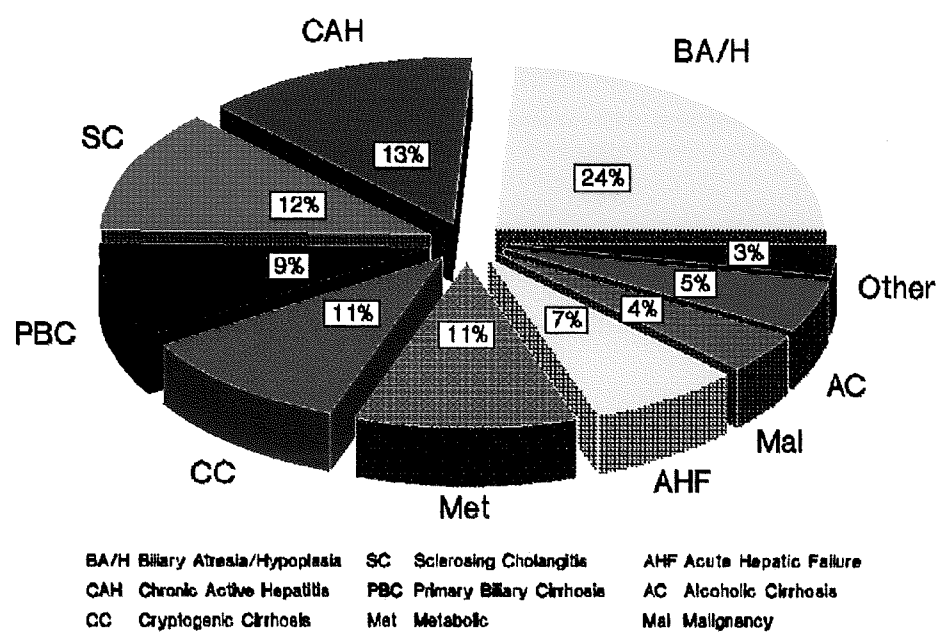


Recipients came from all states and territories in Australia. Forty-five patients from New Zealand were transplanted. Since 1989 New Zealand has been part of the donor pool for all units and to date 41 livers from New Zealand donors have been transplanted in Australia. Most centres have transplanted other non-Australian residents from the Pacific region, Asia and Europe. These patients were only transplanted when no suitable Australian or New Zealand recipient was listed and the organ would otherwise have been discarded. Ninety-nine Australians were transplanted in 1992 giving a transplantation rate of 5.6 per million of population.

The primary diagnosis of all patients at first transplant is shown in Figure 4.

Figure 4

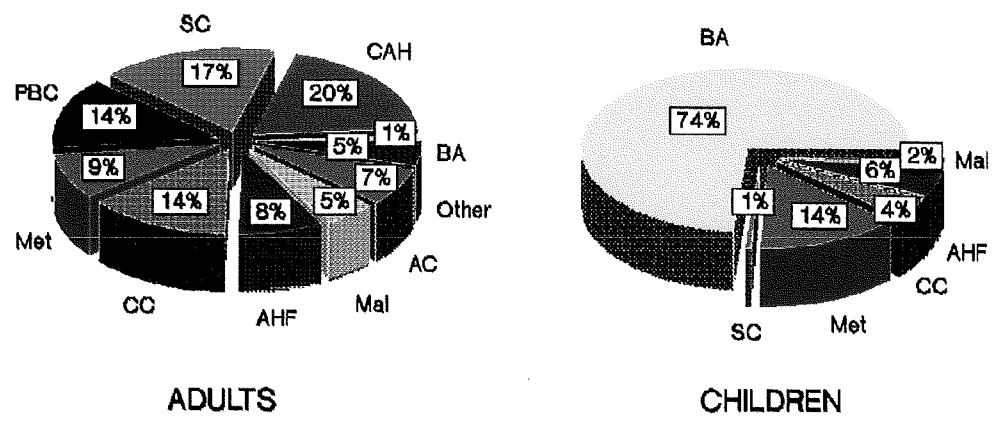
PRIMARY DIAGNOSIS



The predominant disease of paediatric recipients was biliary atresia followed by inborn errors of metabolism. Adult recipients continued to demonstrate an even spread over a number of disease categories. (Figure 5)

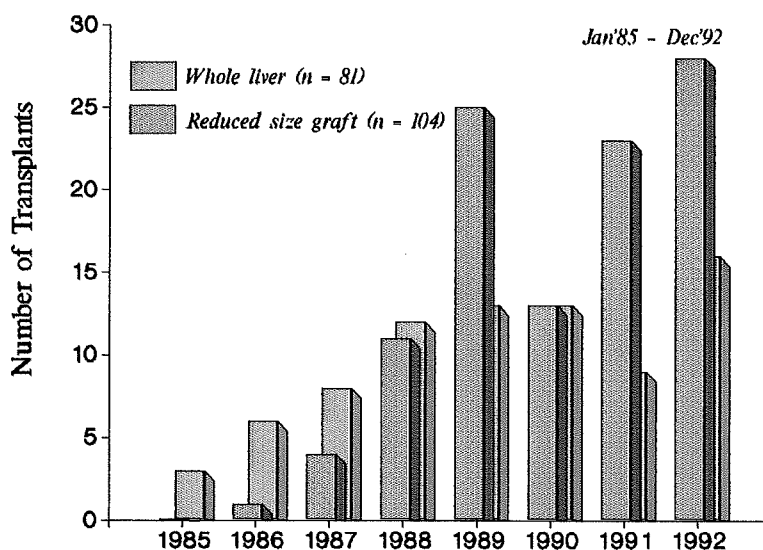
Figure 5

- | | | | |
|-----|---------------------------|-----|-----------------------|
| BA | Biliary Atresia | Met | Metabolic |
| CAH | Chronic Active Hepatitis | CC | Cryptogenic Cirrhosis |
| SC | Sclerosing Cholangitis | AHF | Acute Hepatic Failure |
| PBC | Primary Biliary Cirrhosis | Mal | Malignancy |
| AC | Alcoholic Cirrhosis | | |



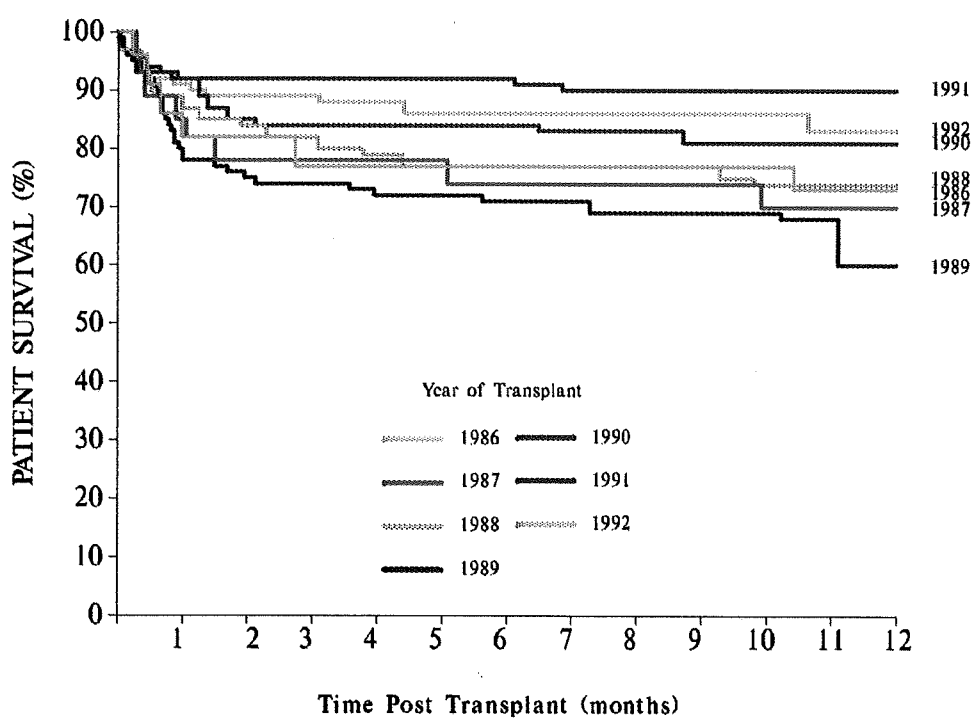
Again in 1992, because of the relative scarcity of paediatric donor organs, the majority of paediatric patients (64%) received reduced size grafts from adult donors (Figure 6). Since reduced size grafts were first introduced in 1986, 58% of paediatric transplants utilized this technique. Five children received segmental grafts from a parent. (4 primary, 1 second graft). Four patients are alive; one required retransplantation with a cadaver graft at 10 months for chronic rejection.

Figure 6 Paediatric Recipients

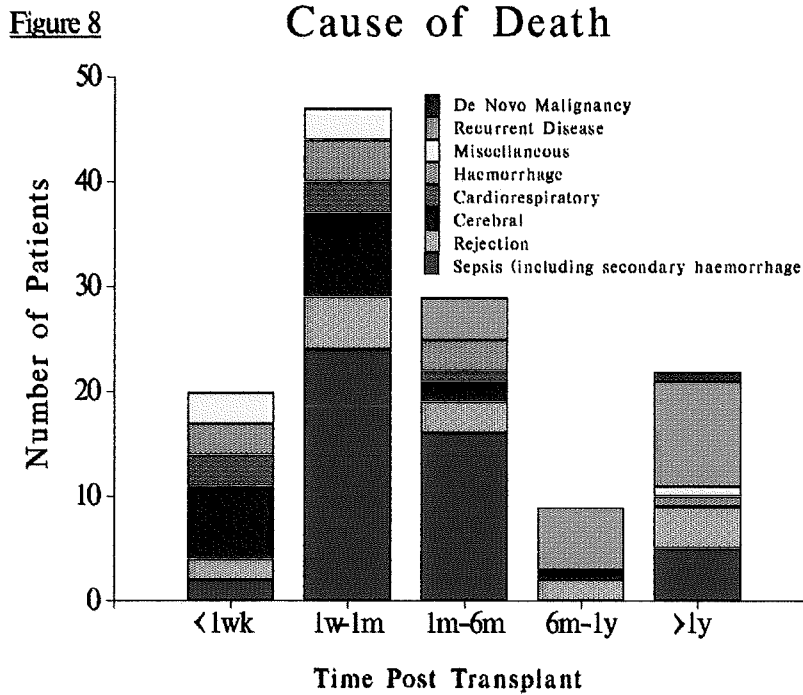


One year patient survival by year was combined and is represented in Figure 7. The improvement seen since 1990 was sustained in 1992 with 1 year patient survival of 83%.

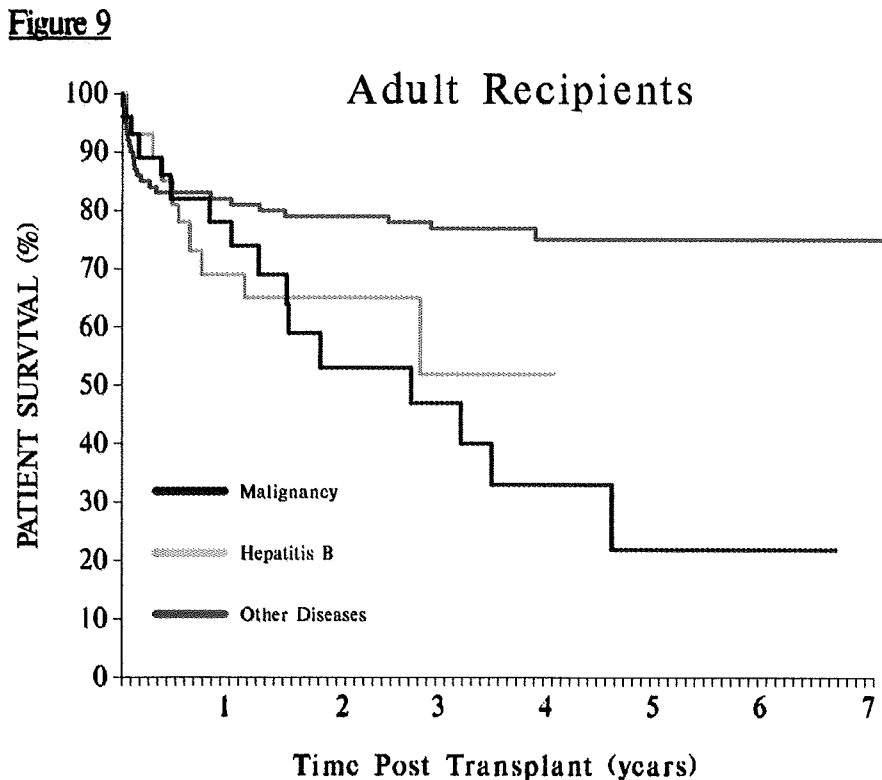
Figure 7



The survival curve profiles illustrate significant early mortality and correspond to the period when the risk of death from sepsis, rejection and technical complication was highest and immunosuppression is maximal. (Figure 8)

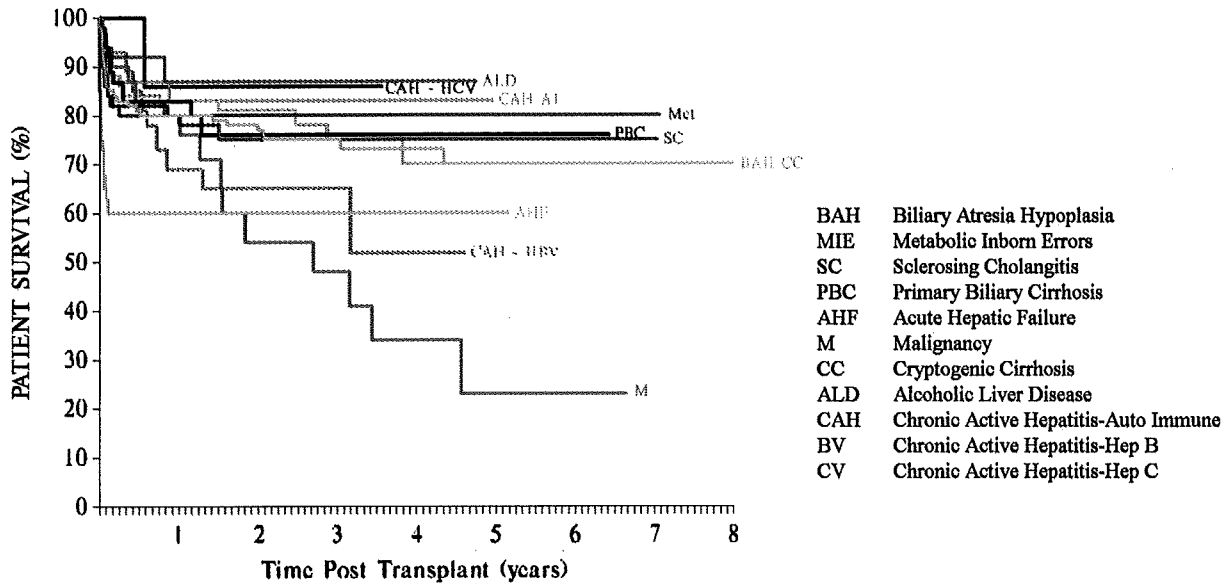


Sepsis, including secondary haemorrhage was the main cause of death in the early post operative period. Recurrent disease, both malignancy and hepatitis B caused significant mortality in the medium to long term in adult recipients. (Figure 9)



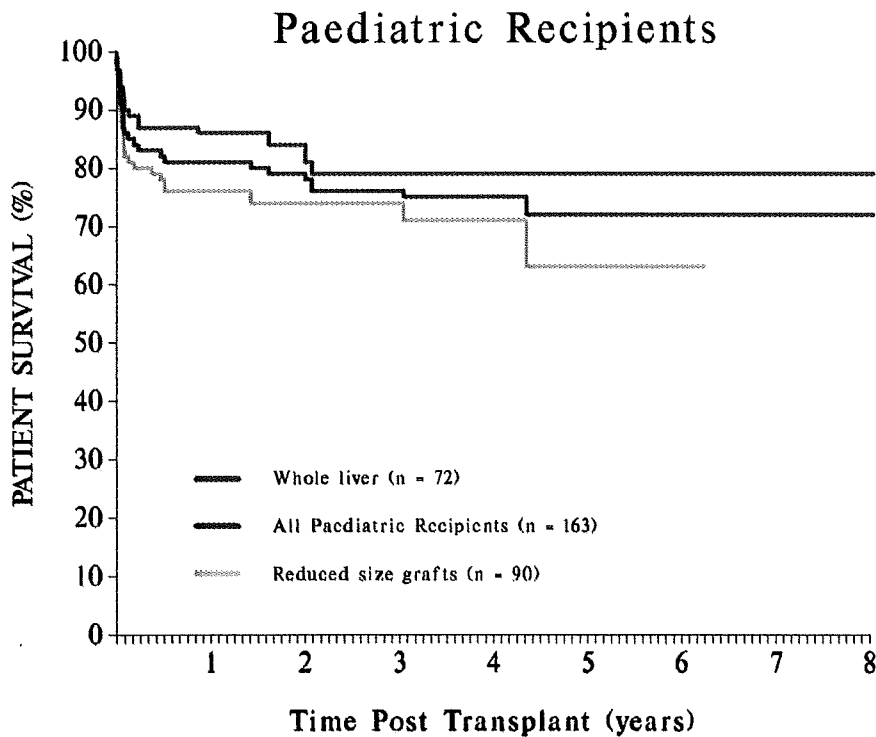
The outcome by primary disease is shown in Figure 10

Figure 10



Paediatric patients who received reduced size grafts did not fare as well as recipients of whole livers (Figure 11). While the technique of reduced size grafts may partly be responsible, other factors such as advanced malnutrition and urgency contributed to mortality. There was continued evidence that the use of reduced size grafts provided many children with their only chance of survival.

Figure 11



The influence of the age at primary transplant on early outcome is shown in Figure 12. Perioperative mortality was highest in young children (infants / toddlers) Excellent results in patients over 60 reflected stringent pre selection.

Figure 12

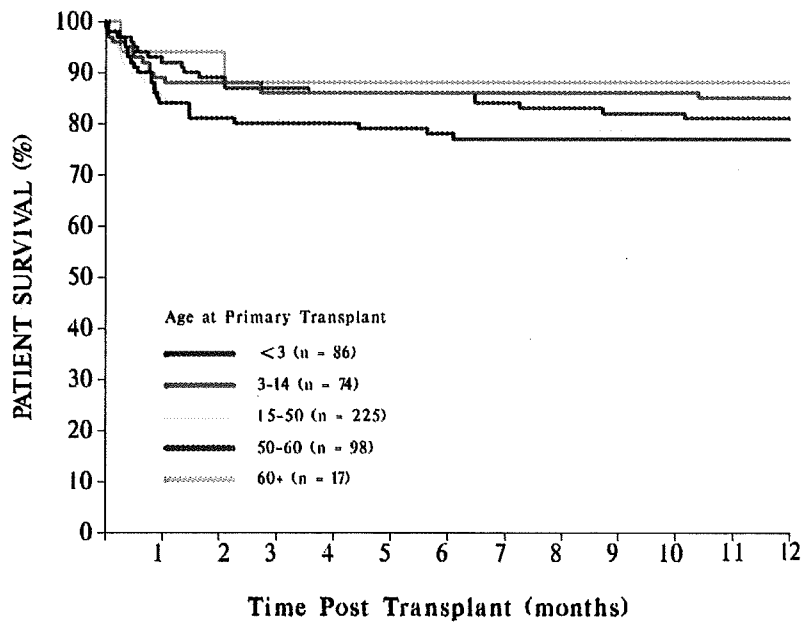
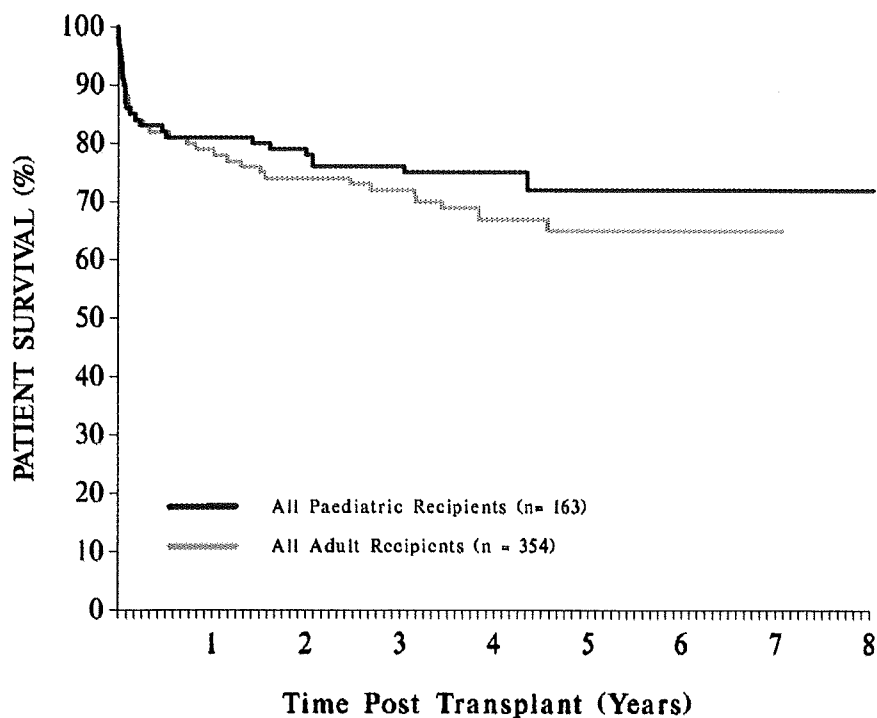


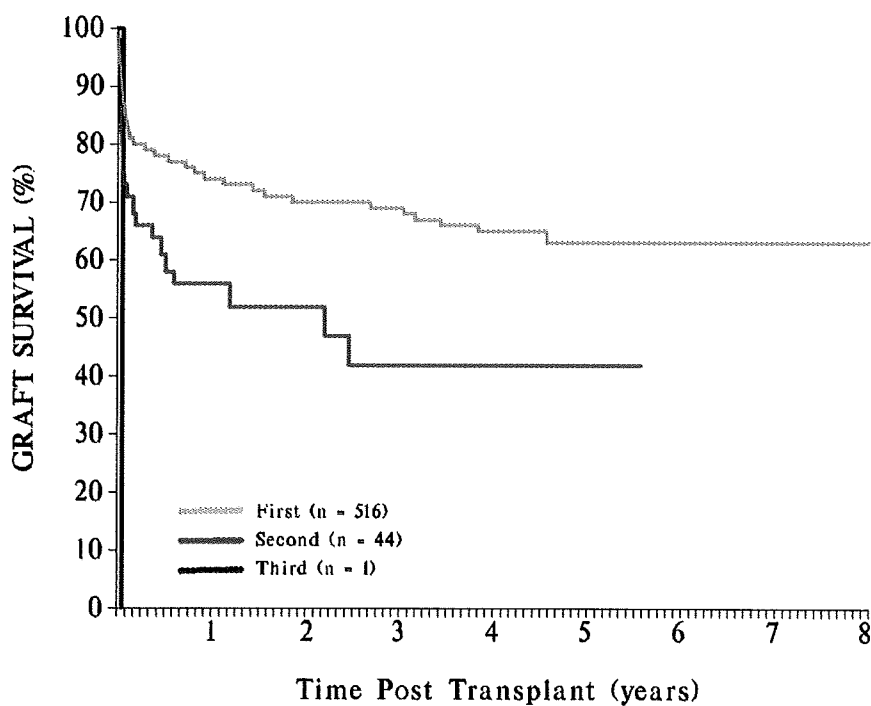
Figure 13 illustrates patient survival for adults and children showing late deaths in both groups. Overall patient survival was 80% at 1 year and 73% at 3 years.

Figure B



Thirty-two patients required retransplantation. Reasons for retransplantation were rejection 30% (5 acute, 8 chronic), vascular complications 33% (usually thrombosis-hepatic artery 12, portal vein 3). Graft failure due to primary non function (5), graft infarction (non- thrombotic) or graft sepsis was responsible for the remainder. Graft survival is shown in Figure 14. Seventy-four percent of first grafts maintained function at 1 year. One year survival of second allografts was 56%.

Figure 14



Combined liver and kidney transplantation was performed on 7 occasions in 6 recipients primarily for hyperoxaluria. All patients are alive.

SUMMARY

While it is difficult to draw conclusions from a multicentre analysis, some broad statements would seem appropriate:

- 1. The increase in the number of transplants performed in 1992 reflected an increase in the number of both adults and children transplanted.**
- 2. The improved results seen in 1990 have been sustained.**
- 3. With appropriate selection criteria, patients over 60 yrs of age fared equally as well as younger adults.**
- 4. Primary graft non-function (7 of 562-1.2%) is low by world standards and reflects the high standard of donor care in Intensive Care Units in Australia and New Zealand.**
- 5. The retransplantation rate of 8.5% is low by world standards.**