LIVER TRANSPLANTATION IN AUSTRALIA

THE EXPERIENCE OF THE THREE NATIONAL LIVER TRANSPLANT CENTRES : BRISBANE, MELBOURNE, SYDNEY.

UNTIL 31/12/1990

3rd REPORT

OF THE COMBINED LIVER TRANSPLANT REGISTRIES.

JUNE 1991.

INTRODUCTION

The three established liver transplantation groups in Australia have agreed to interchange information concerning their liver transplantation experience. All three units thus have their own capability of assessing and analysing the current situation with regards liver transplantation in Australia. The groups have agreed to complete confidentiality with regards individual patients or individual unit results. They have agreed, however, that overall information pertaining to Australia as a whole can be freely promulgated to interested persons.

The first two reports of these combined registries were kindly produced by the Sydney group. In December it was agreed that the three units would in future share the responsibilty for the production of an annual report and this document represents the Brisbane Unit's place in this rotation.

Numbers of copies of this report are held by the Directors of each of the units to whom requests for additional copies can be made. Similarly enquiries concerning aspects of liver transplantation in Australia generally would be welcomed by each unit.

We have endeavoured to closely follow the format developed by Professor Sheil in 1989 and some sections of text have been reproduced verbatim. The tables and graphs have naturally been updated and new trends highlighted.

We have attempted to maintain objectivity in the presentation of the data contained herein and have thus avoided reference to specific contributions by individual units.

Finally a word of praise for the Australian and New Zealand transplant co-ordinators who have contributed much in facilitating the interstate and international exchange of hepatic allografts, which in many instances involved considerable time and effort on their part.

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After the 1989 report was circulated a further 80 liver transplants were performed to December 31st 1990. Twenty six were in children and 50% used one or other technique of reduction hepatectomy. Two children have received living related partial allografts. Split liver transplantation has also been introduced (two recipients from a single cadaver graft) and a total of four recipients have been grafted using this technique.

The federal government has now standardised funding arrangements for all three existing units and each now has National Centre status.

Figure 1

DIAGNOSIS

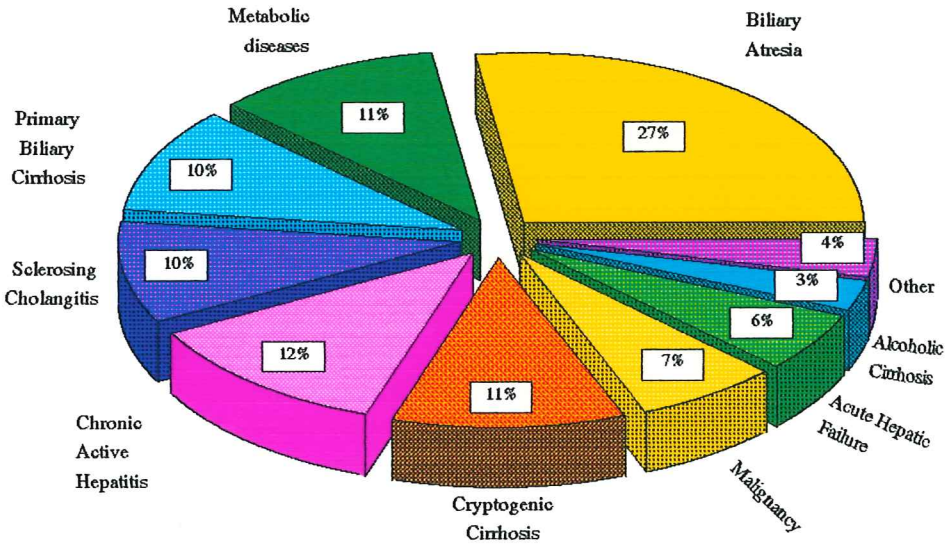
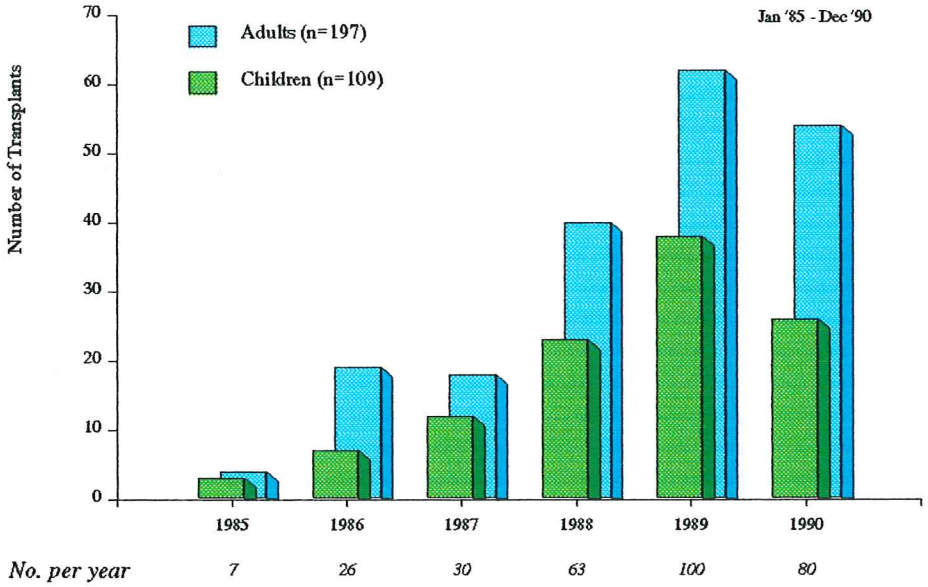


Figure 1 illustrates the diagnosis of patients at primary transplant. All centres have transplanted numbers of non-Australian residents (most commonly New Zealanders and Japanese). The disease category most skewed by this offshore contribution is biliary atresia.

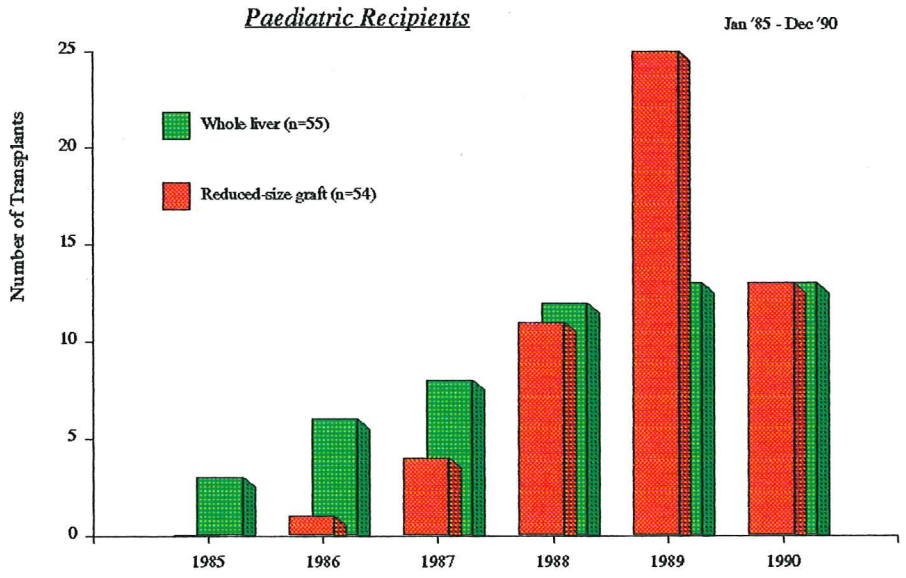
No effort to separate Australian residents from non nationals or Australian non residents has been made as no epidemiological conclusions can be drawn from such data. The incidence of various types of liver disease in Australia is not reflected by those transplanted or even those referred for consideration for transplant. This is most obvious in the group of patients with alcoholic liver disease.

Figure 2



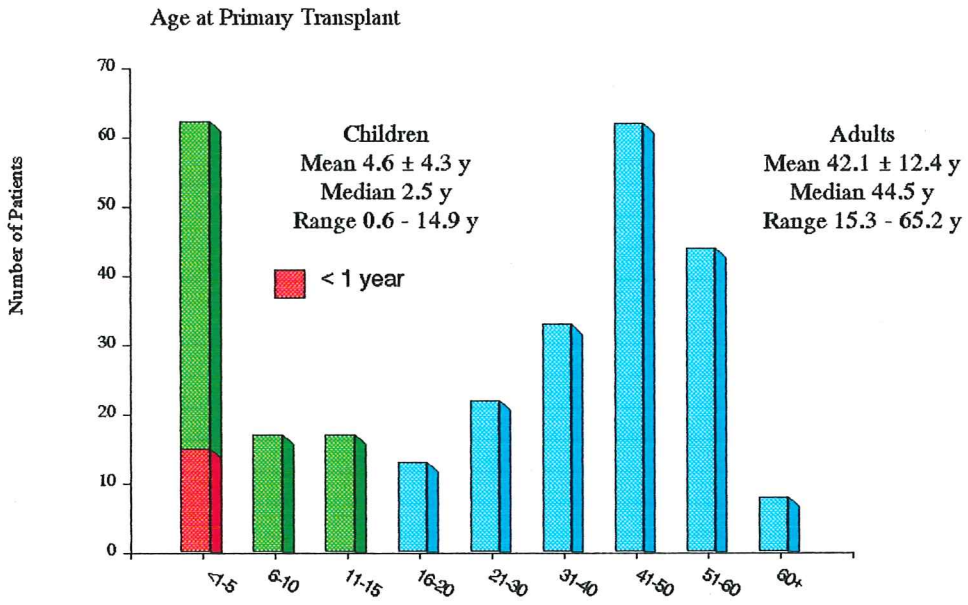
From January 1985 to December 1990, 306 transplants were performed in 279 patients (adults 182, children 97). Twenty six patients received second grafts (adults 14, children 12) and one adult received a third graft. (Figure 2)

Figure 3



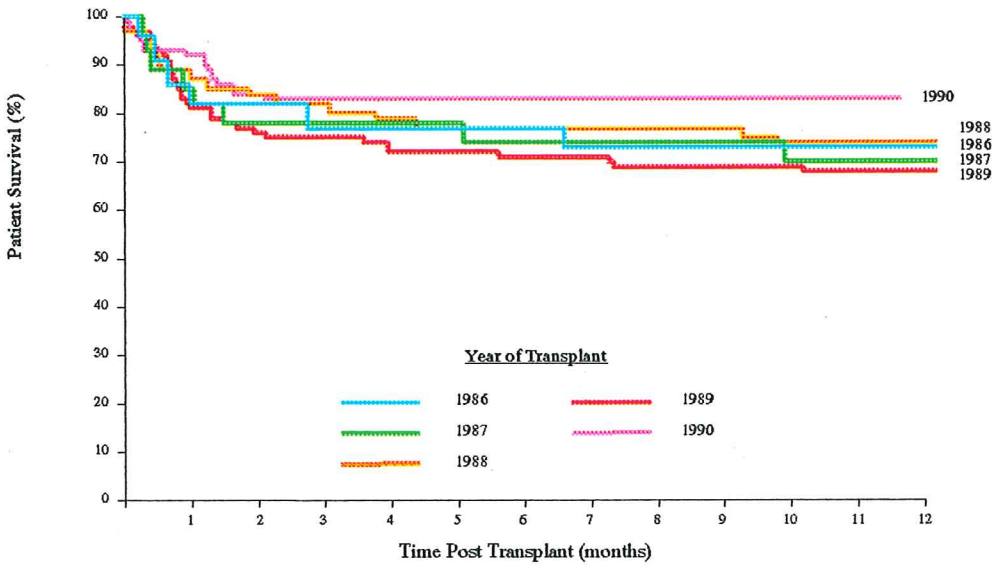
Because of the relative shortage of paediatric donor organs, techniques of adult allograft reduction were implemented in 1986. Half of the children transplanted received reduced size livers. (Figure 3)

Figure 4



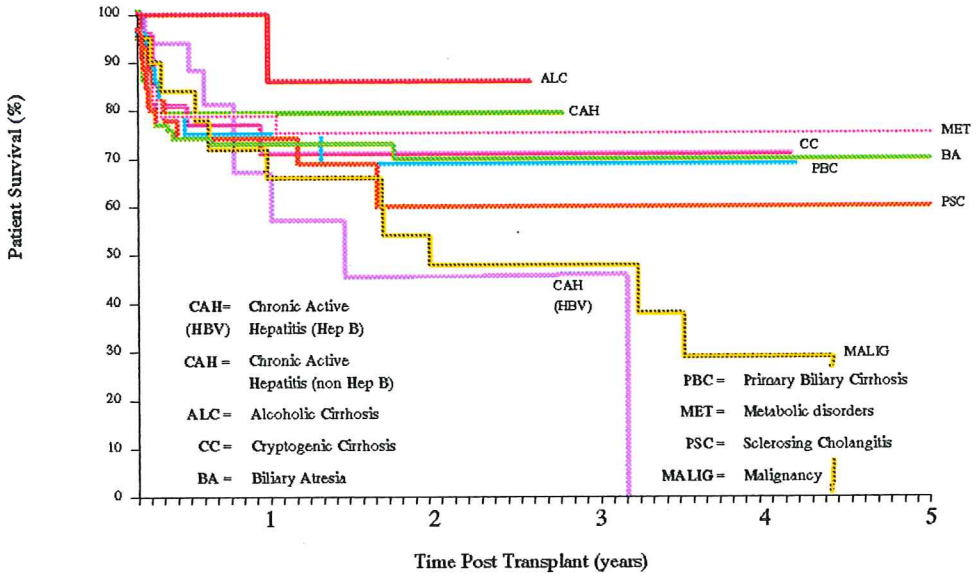
The age distribution is bimodal reflecting the primary disease for which transplantation is performed. In children biliary atresia is predominant. In adults chronic liver disease is usually manifest in the fifth decade. A small number of selected patients in their sixties have also been transplanted. (Figure 4)

Figure 5



One year patient survival for all subgroups by year was combined and is represented in Figure 5. The curve profiles illustrate significant early mortality and correspond to the period when risk of death from sepsis, rejection, and technical complications is highest and immunosuppression is maximal.

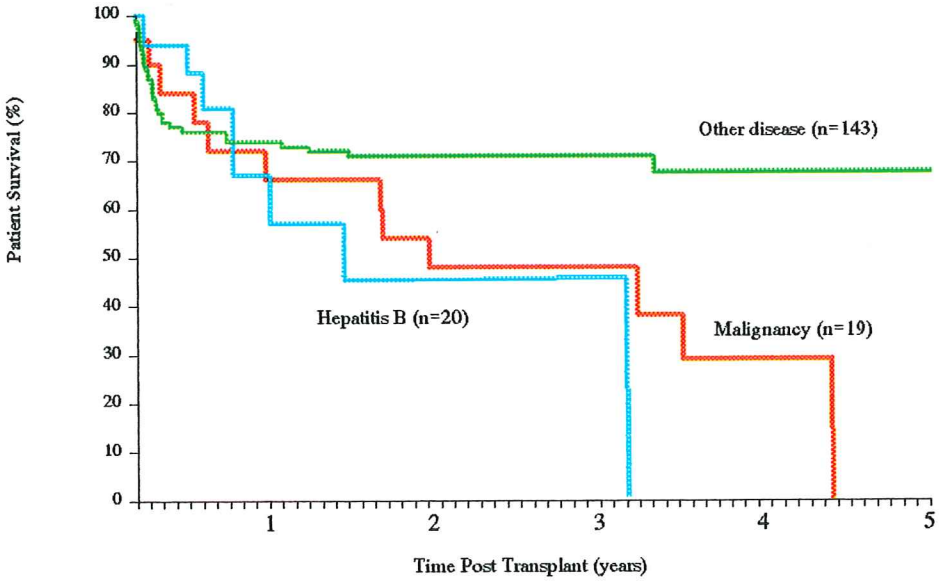
Figure 6



Generally, as in renal tranplantation, outcome is usually dependent on factors other than the primary disease process. However two categories with a higher potential for disease recurrence have emerged. These are patients with chronic hepatitis B or malignancy at the time of transplant. (Figure 6)

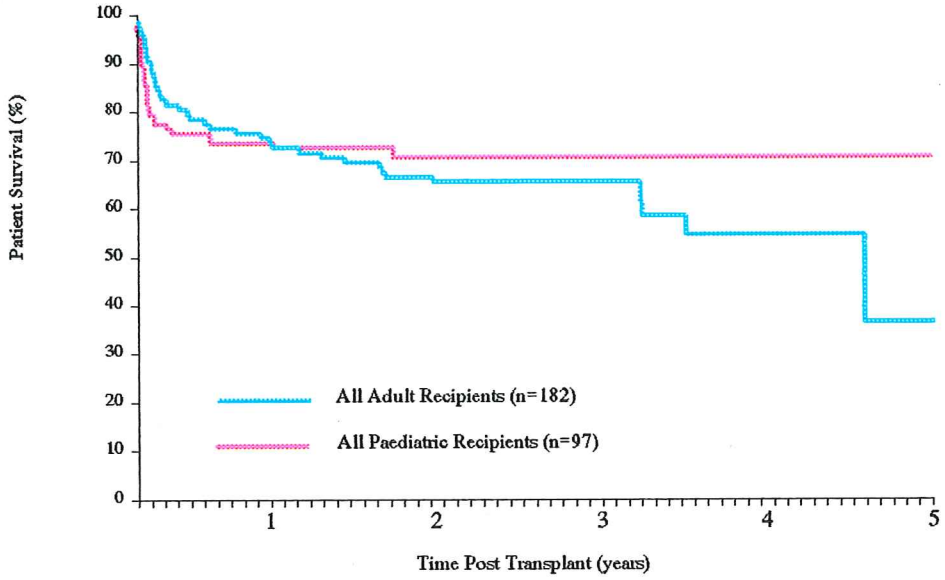
Figure 7

Adult Recipients



Comparison of adult and paediatric survival reveals that the main difference is due to the propensity for disease recurrence in the adult group. (Figures 7,8)

Figure 8



Paediatric patients who received reduced size grafts did not fare as well as recipients of whole livers. (Figure 9) Factors other than the technique itself may be responsible for this apparent disadvantage (eg advanced malnutrition). Insufficient data is available to allow meaningful multicentre analysis. Certainly for many of the children transplanted a reduced size graft presented the only chance for survival and waiting list mortality has been reduced accordingly. However selection of those whose need was more urgent for reduced allografts, may make the comparison of outcome between recipients of whole and reduced grafts invalid.

Figure 9

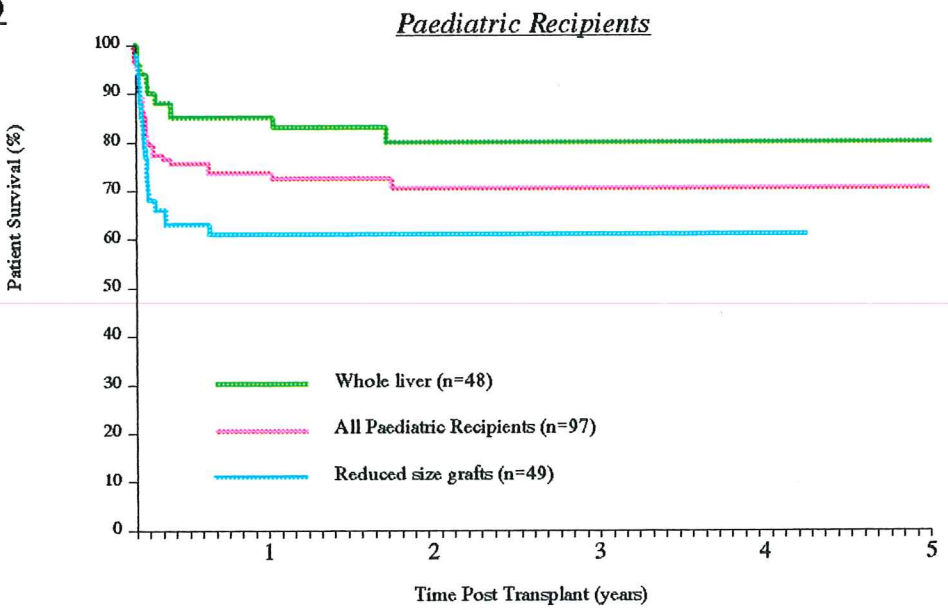
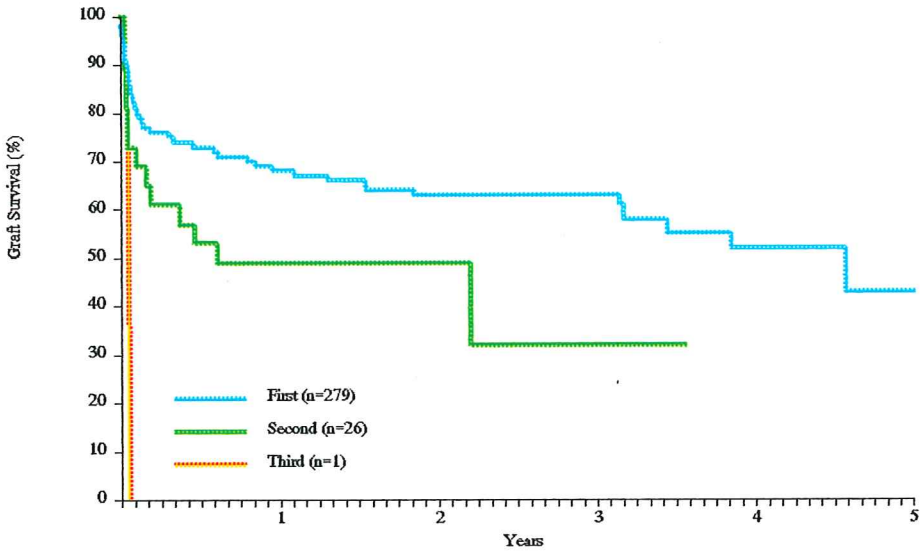
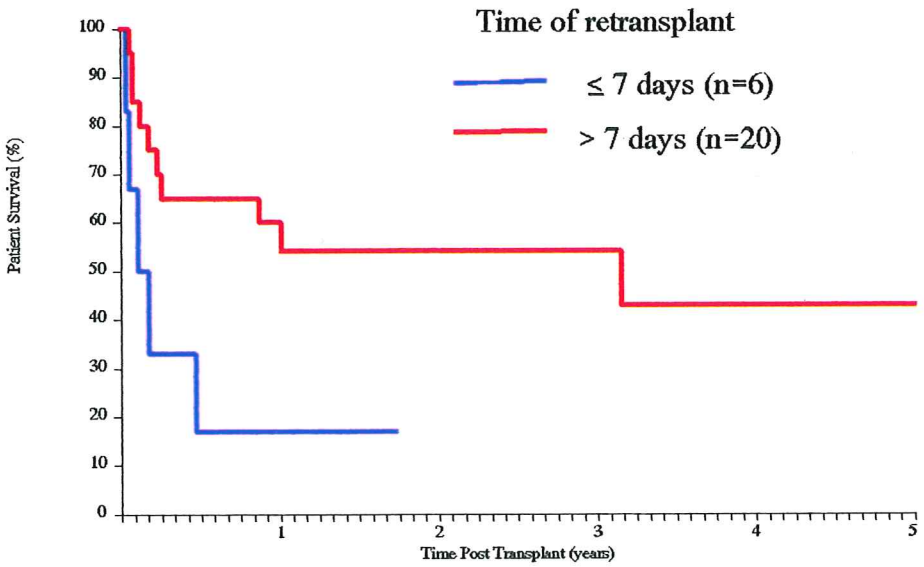


Figure 10



Survival of grafts (Figure 10) and patients (Figure 11) after retransplantation was inferior to primary transplantation. This was particularly evident when retransplantation was performed as an emergency procedure within a week following the first engraftment. The outcome may reflect poor general condition of the patient and the hostile environment into which the subsequent liver was placed rather than immune events.

Figure 11



CONCLUSION

Whilst the data presented is of general interest particularly to the contributing units, very little can actually be concluded from such a multicentre analysis. Selection criteria and relative proportions of paediatric cases differ as do immunosuppressive regimens. Clearly, early survival is inferior to cardiac and renal transplantation and reflects its relative complexity. However the Australian data compares favourably with that of other international liver transplant registries. All orthotopic liver transplant recipients from all units performing the procedure have been entered. Australia therefore possesses the only truly complete national liver transplant registry.