

NHS BLOOD AND TRANSPLANT

BOWEL ADVISORY GROUP

POST-TRANSPLANT SURVIVAL AFTER INTESTINAL TRANSPLANT, 1998 - 2012

SUMMARY

INTRODUCTION

- 1 This paper reports on patient survival following intestinal transplantation, for transplants performed in the UK over a 15 year period. A similar paper was presented for the first time at the BAG meeting in Spring 2012 and it was agreed to be presented annually.

DATA ANALYSIS

- 2 Data on 131 first intestinal transplants carried out between 1 January 1998 and 31 December 2012, with known follow-up data as at 25 January 2013, were analysed. Of the 131 patients, 83 were paediatric (≤ 16 years) and 48 were adult.
- 3 Patient survival following intestinal transplantation was 90% and 77% at 90 days and 77% and 73% at one year post-transplant for paediatric and adult patients, respectively. These differences were not statistically significant.
- 4 Further analysis by transplant year suggests paediatric patient survival to 90 days and 1 year has improved from 83% and 72%, respectively, for transplants between 1998 and 2002 to 95% and 84% for transplants between 2008 and 2012. However, the improvements in survival rates were not statistically significant so should be interpreted with caution.
- 5 For transplants between 2008 and 2012 inclusive:
Paediatric one year patient survival - 84% (95% CI 67.8% – 92.5%)
Adult one year patient survival - 78% (95% CI 60.5% – 88.5%)
- 6 For both adult and paediatric patients, results suggest that survival to 90 days is slightly less favourable for intestinal transplants that included the liver, but again, these differences were not statistically significant so should be interpreted with caution.

RECOMMENDATION

- 7 The analyses suggest that the general trends are for improvements but the results presented should be regarded as guidance only due to the small number of transplants and a cohort that spans a 15 year period.

Sally Rushton and Claire Counter
February 2013

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INTRODUCTION

- 8 This paper reports on patient survival following intestinal transplantation, for transplants performed in the UK over a 15 year period. A similar paper was presented for the first time at the BAG meeting in Spring 2012 and it was agreed to be presented annually. The results should be regarded as guidance only due to the limited amount of data available.

DATA AND METHODS

- 9 Data on 131 first intestinal transplants carried out between 1 January 1998 and 31 December 2012, with known follow-up data as at 25 January 2013, were included. Intestinal failure patients who received a liver only transplant were excluded. Of the 131 patients, 83 were paediatric (≤ 16 years) and 48 were adult.
- 10 The Kaplan-Meier estimation method was used to produce survival curves and estimates of 90 day, 1 year and 5 year patient survival, where the outcome event was patient death. Analyses were broken down by age group, transplant era or transplant type. The number of deaths in each group was often very small so the results should be interpreted with caution.
- 11 The log-rank test was used to make comparisons between the survival of different groups of patients. The p-values from these tests are presented within the plots, however, they should be treated with caution since the small number of events means that a slight change in the number could affect the p-value considerably.
- 12 The types of intestinal transplant are categorised as:
- BO Bowel Only (all those not including a liver or pancreas)
 - BP Bowel and Pancreas
 - LBP Liver, Bowel and Pancreas
 - MV Multivisceral (liver, bowel, pancreas and stomach/spleen/kidney/abdominal wall/colon)
 - MMV Modified Multivisceral (bowel, pancreas and stomach/spleen/kidney/abdominal wall/colon)

RESULTS

- 13 **Figure 1** shows 90 day and 1 year survival of paediatric and adult patients who received an intestinal transplant in the time period analysed. Patient survival following intestinal transplantation was 90% and 77% at 90 days and 77% and 73% at one year post-transplant for paediatric and adult patients, respectively, although these differences were not statistically significant. **Figure 2** shows long-term patient survival by age group.

- 14 **Figures 3, 4 and 5** focus just on paediatric patients transplanted in the time period. **Figure 3** suggests that paediatric patient survival to 90 days and 1 year has improved from 83% and 72%, respectively, for transplants between 1998 and 2002 inclusive, to 95% and 84%, respectively, for transplants between 2008 and 2012 inclusive. However, the difference in survival was not statistically significant so should be interpreted with caution. **Figure 4** shows 90 day and 1 year survival by transplant type and results suggest that survival to 90 days is slightly less favourable for intestinal transplants that included the liver, but again, these differences were not statistically significant so should be interpreted with caution. **Figure 5** shows 1 year survival by transplant type and transplant era.
- 15 **Figures 6, 7 and 8** focus just on adult patients transplanted in the time period. **Figure 6** shows 90 day and 1 year survival by transplant era, although comparisons are difficult due to the small number of transplants performed in adults in the earlier years. For transplants between 2008 and 2012 inclusive, 90 day and 1 year estimates of adult patient survival were 90% and 78%, respectively. **Figure 7** shows 90 day and 1 year survival by transplant type and this suggests that survival to 90 days is slightly less favourable for intestinal transplants that included the liver. **Figure 8** shows 1 year survival by transplant type and transplant era.

SUMMARY

- 16 Exploratory unadjusted analysis of paediatric patient survival following intestinal transplantation suggests that survival to 90 days and 1 year has improved from 83% and 72%, respectively for transplants between 1998 and 2002 to 95% and 84% for transplants between 2008 and 2012, although the improvements in survival rates were not statistically significant.
- 17 Fewer transplants were carried out in adult patients in the early part of this 15 year period compared with recent years, making comparisons between transplant eras difficult. However, 90 day and 1 year estimates of adult patient survival for transplants between 2008 and 2012 inclusive were favourable, at 90% and 78%, respectively.
- 18 For both adult and paediatric patients, results suggest that survival to 90 days is slightly less favourable for intestinal transplants that included the liver, but again, these differences were not statistically significant so should be interpreted with caution.

RECOMMENDATION

- 19 The analyses suggest that the general trends are for improvements but the results presented should be regarded as guidance only due to the small number of transplants and a cohort that spans a 15 year period.

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February 2013

Figure 1 90 day and 1 year patient survival following intestinal transplantation, by age group

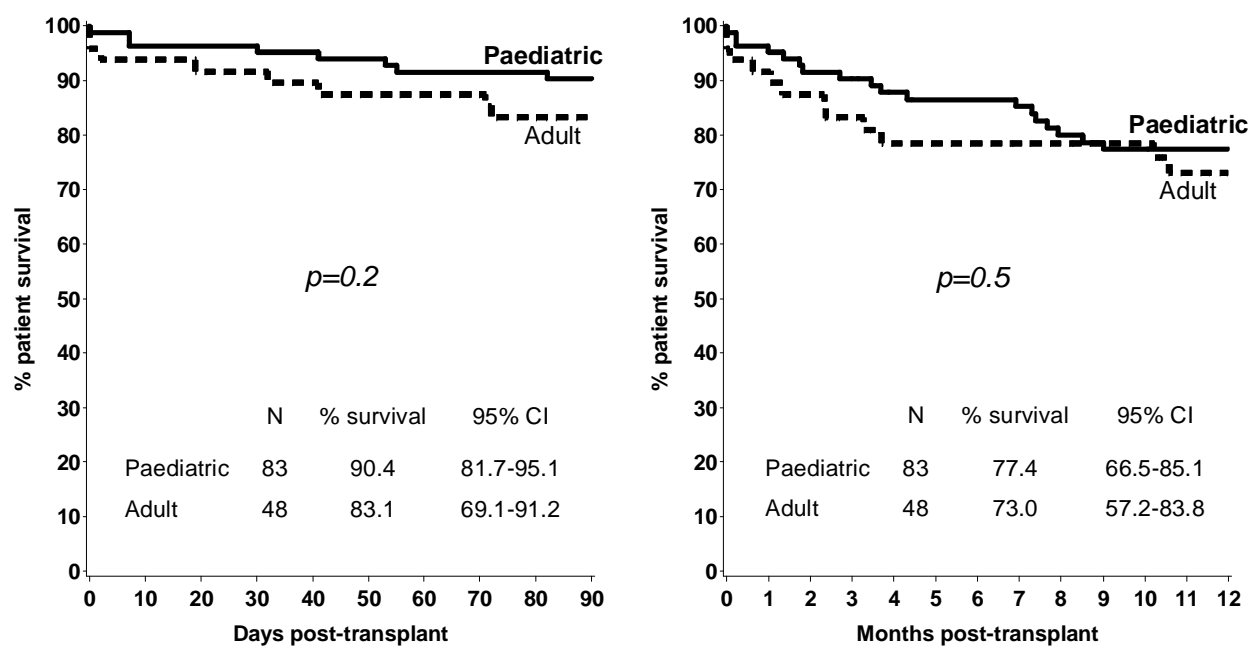
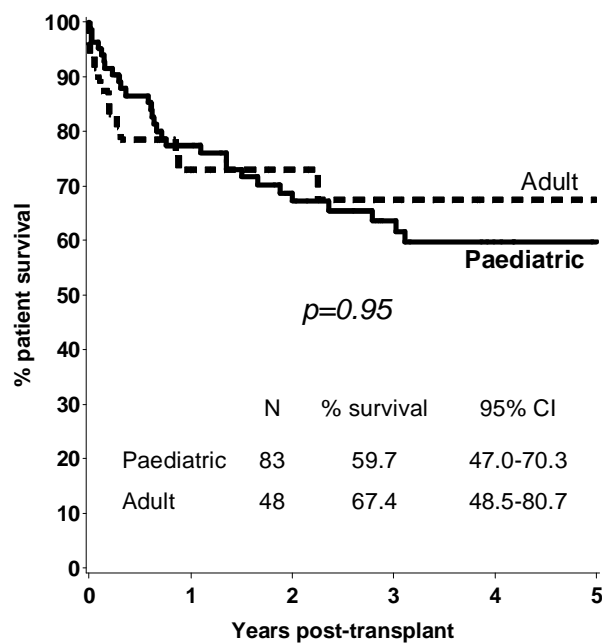


Figure 2 5 year patient survival following intestinal transplantation, by age group



PAEDIATRIC PATIENTS

Figure 3 90 day and 1 year paediatric patient survival following intestinal transplantation, by transplant era

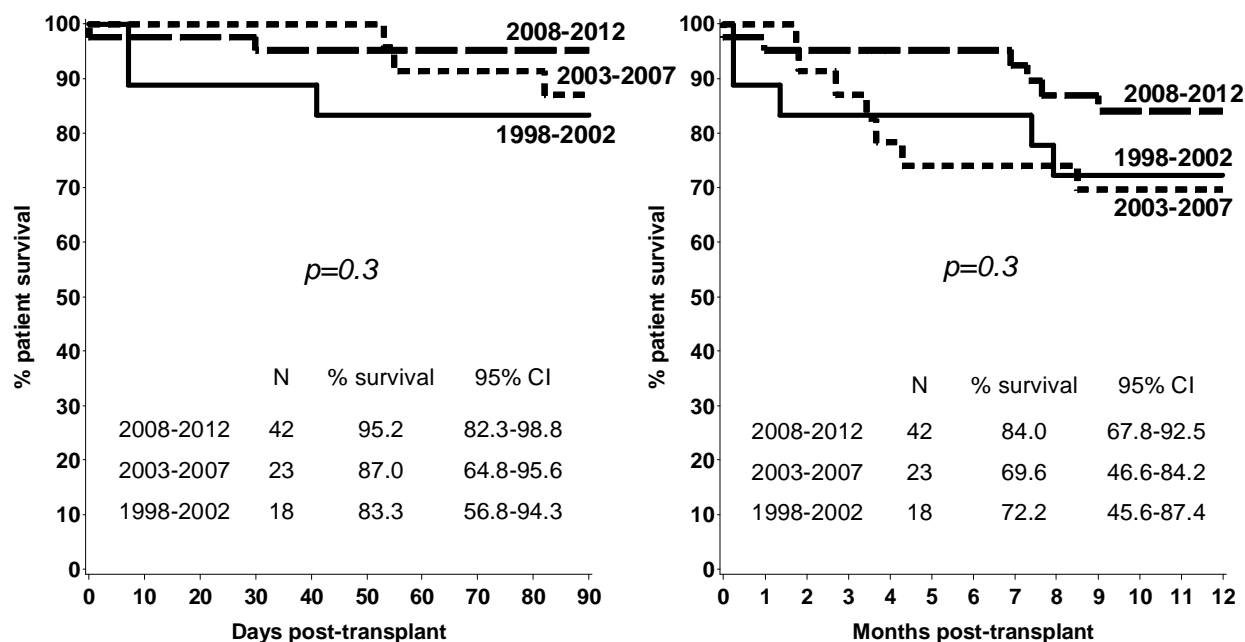


Figure 4 90 day and 1 year paediatric patient survival following intestinal transplantation, by transplant type

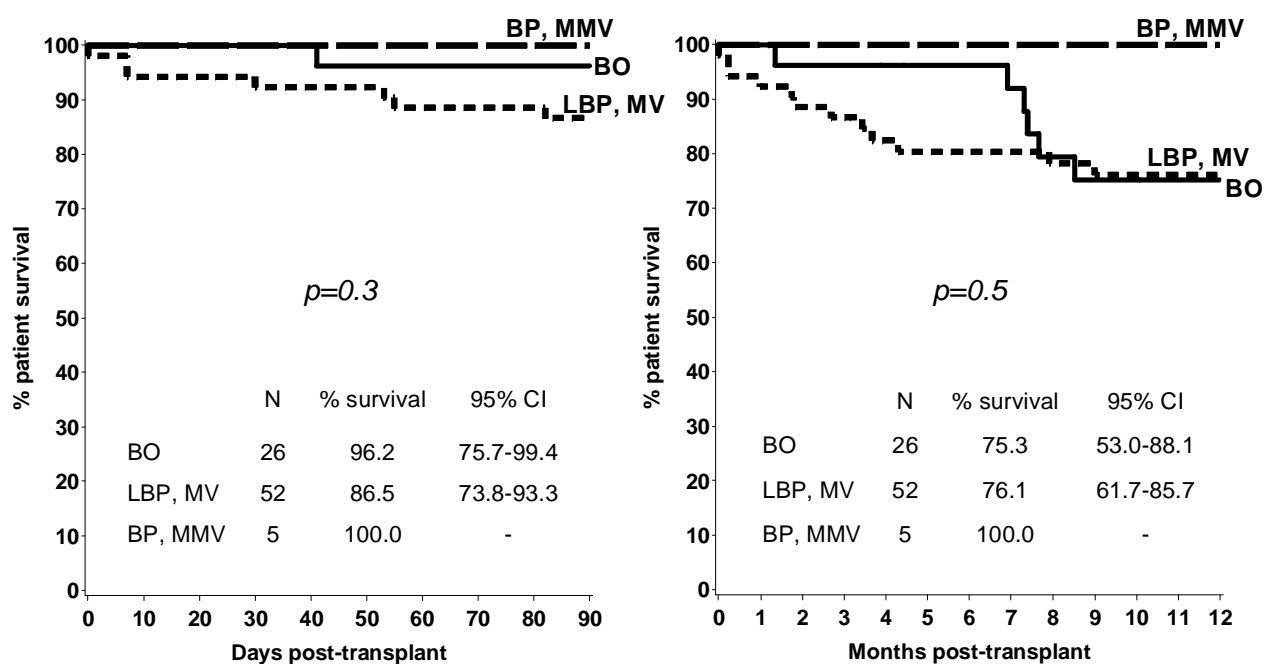
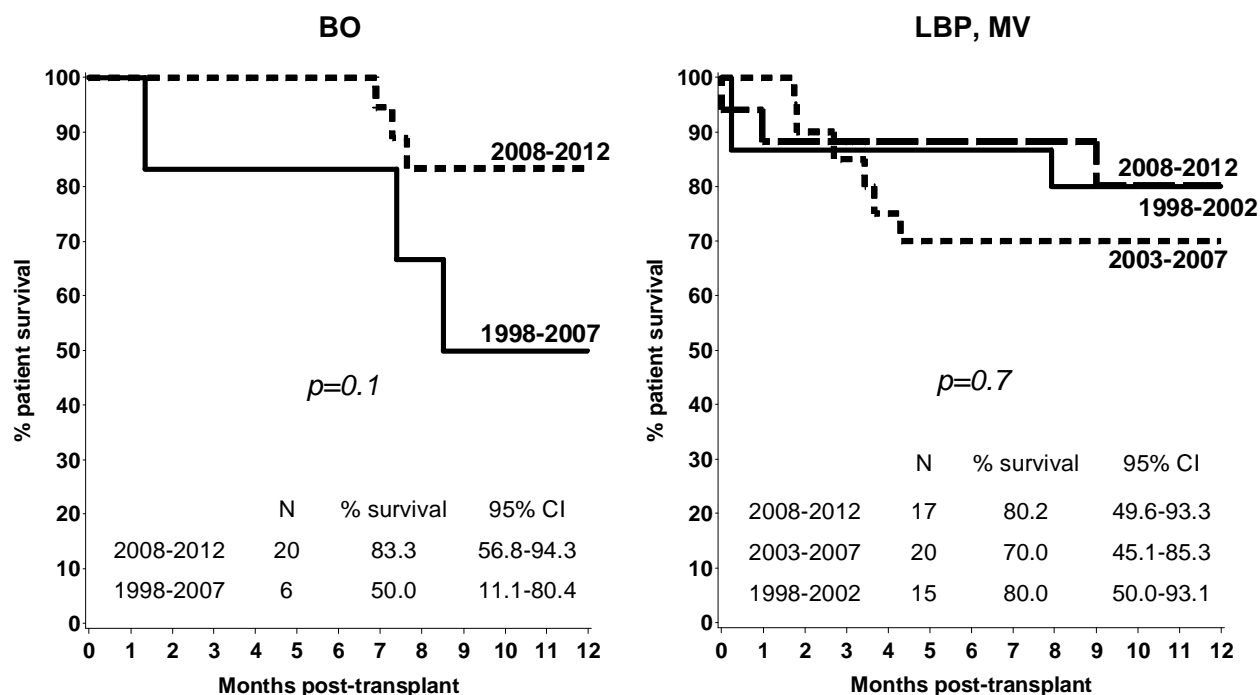


Figure 5 1 year paediatric patient survival following intestinal transplantation, by transplant type and era



ADULT PATIENTS

Figure 6 90 day and 1 year adult patient survival following intestinal transplantation, by transplant era

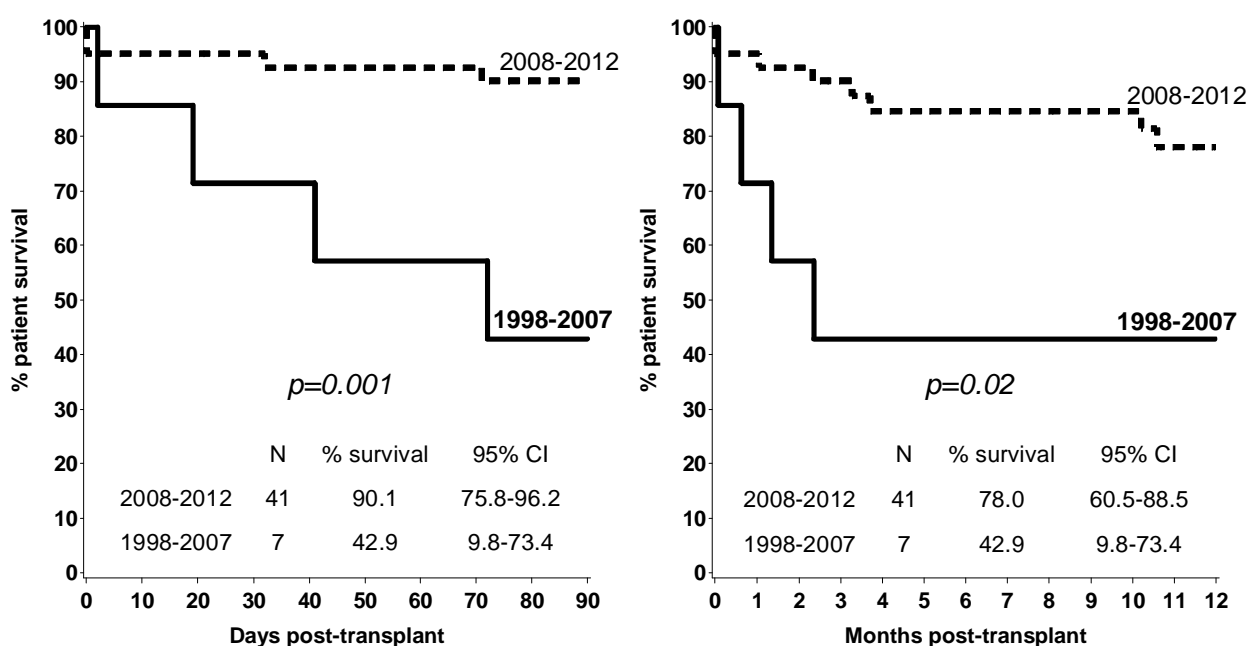


Figure 7 90 day and 1 year adult patient survival following intestinal transplantation, by transplant type

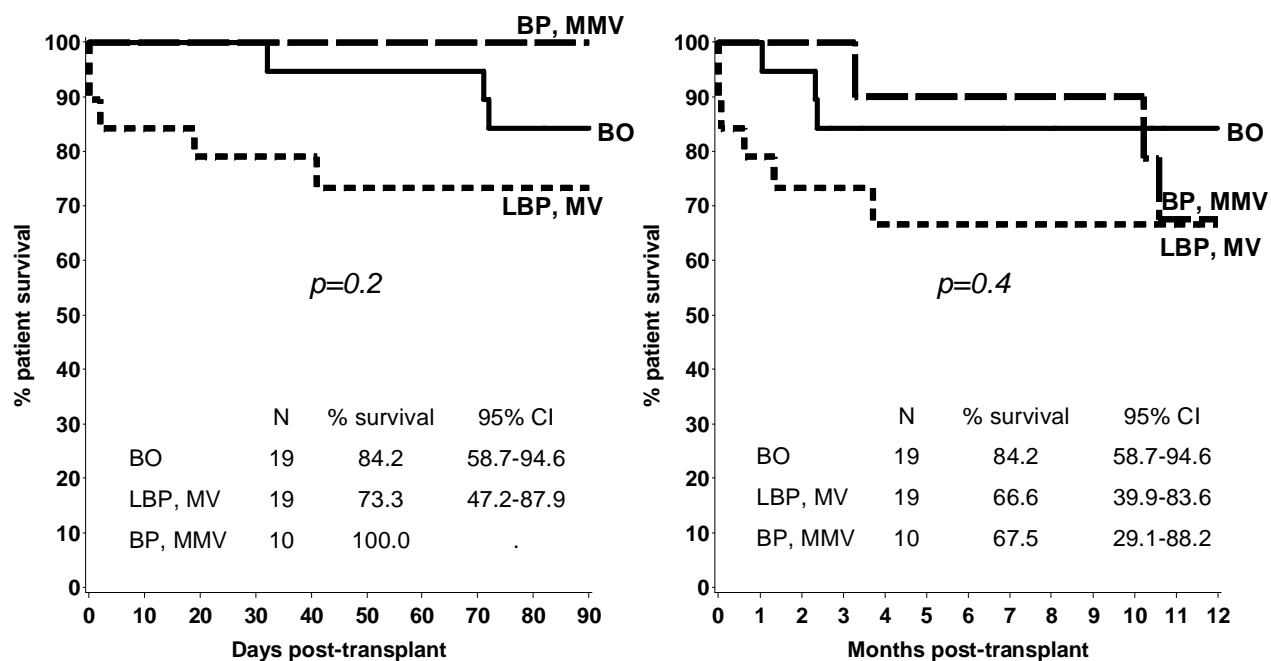


Figure 8 1 year adult patient survival following intestinal transplantation, by transplant type and era

