

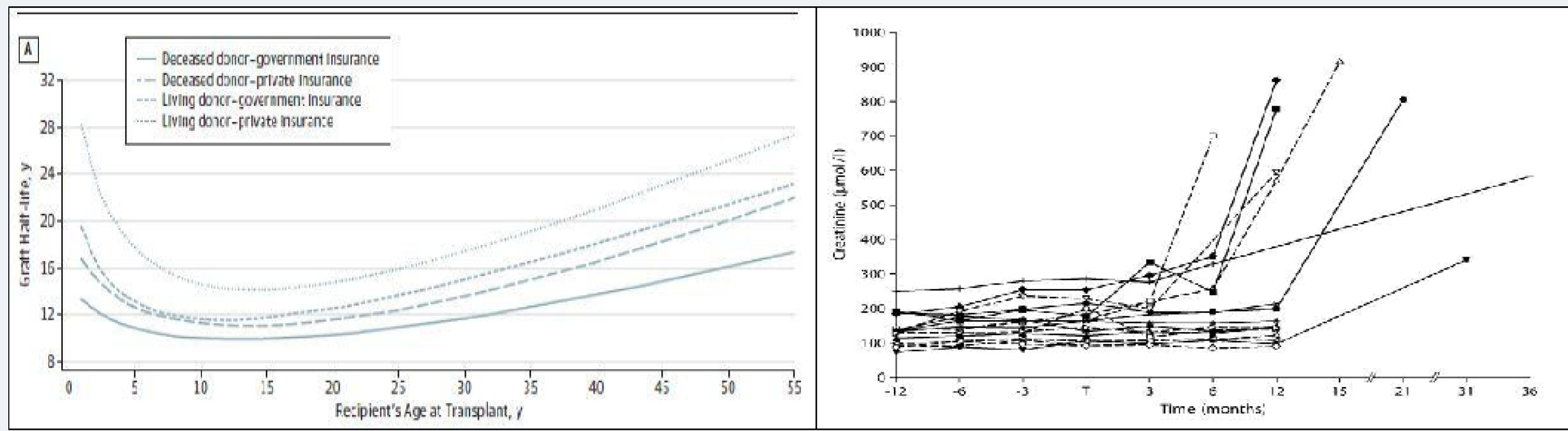
THE WEST MIDLANDS RENAL TRANSPLANT TRANSITION SERVICE: EFFECT ON GRAFT FUNCTION

L Kerecuk¹, G Lipkin², D Milford¹, J Hodson³, C Edwards¹, T Panhurst², L McLoughlin-Yip¹, M Manley², M Thompson²

¹Paediatric Nephrology, Birmingham Children's Hospital, ²Renal Medicine, ³Statistics, University Hospital Birmingham

INTRODUCTION: Transition

Transition of paediatric renal transplant recipients to adult care is a critical period associated with high rates of graft loss and a return to dialysis.



West Midlands Transition Service

- West Midlands: 1 Paediatric Renal Centre and 7 Adult Renal Centres
- Patients would transfer from Paediatric Service to all adult centres at varying ages and stages, often via single letter
- The West Midlands transition service was set up in 2006 between the Regional Paediatric Renal Service based at Children's Hospital & University Hospital Birmingham consisting of
 - Multidisciplinary Joint Young Adult Patient Clinics
 - Transition tours
 - Workshops
 - Social events
 - Residential trips

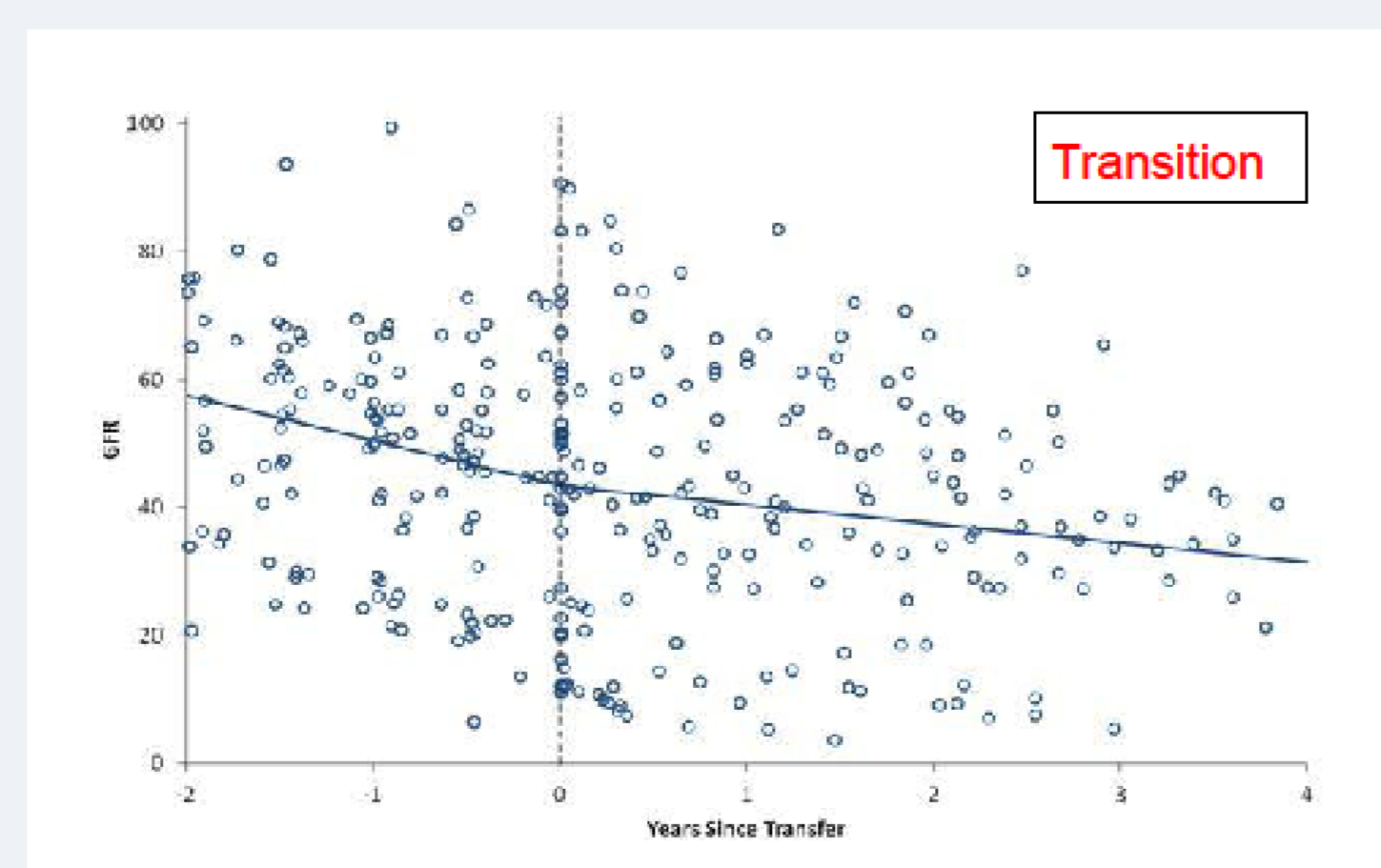
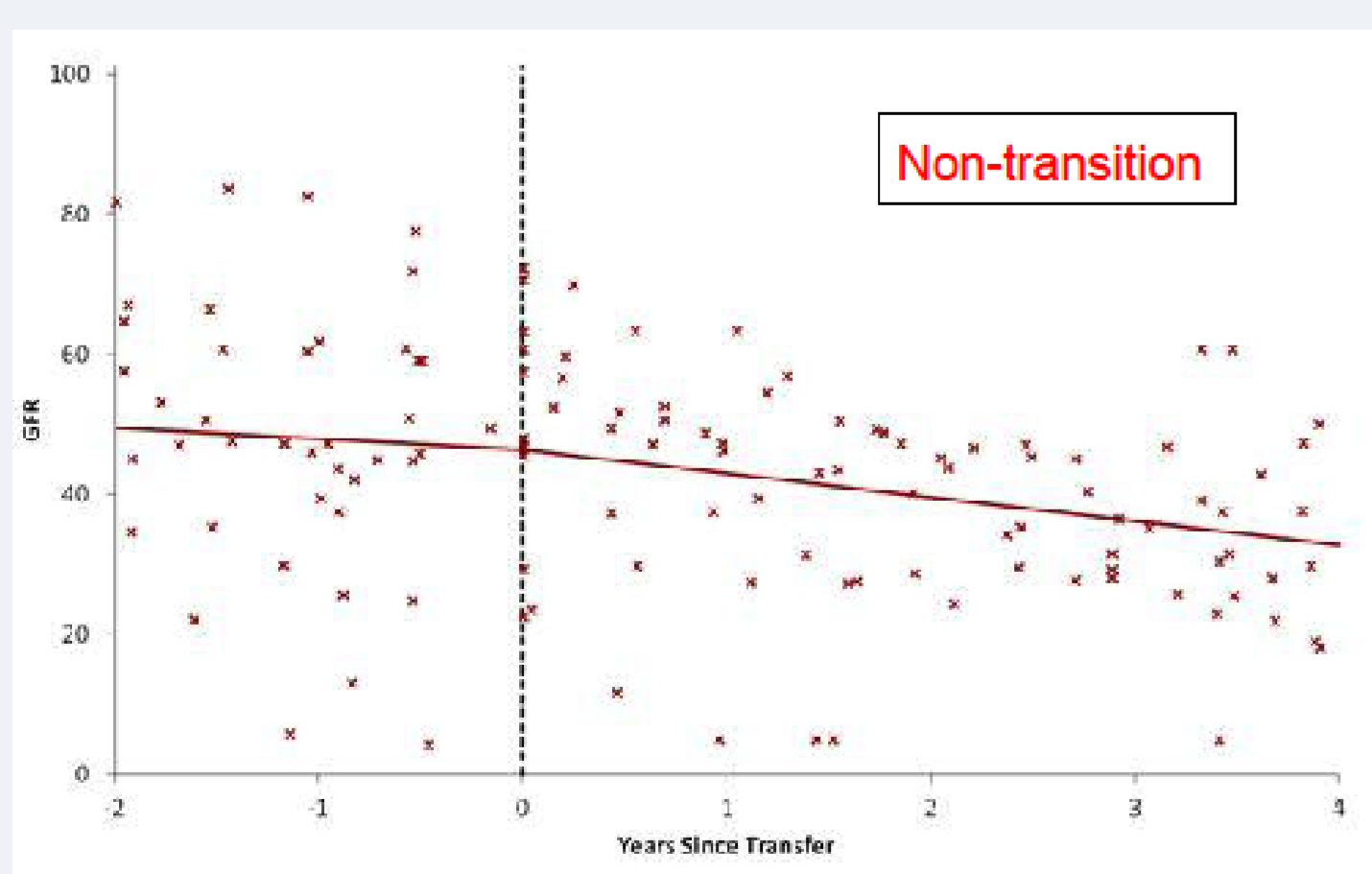


AIM & METHODS

- Data was retrospectively collected for 2 groups of patients:
 - Non-transition group (pre-2006)
 - Transitioned group (post-2006)
- Age, height, creatinine & rejection episodes collected at 6-monthly intervals
- GFR was estimated using modified Schwartz formula
- GFR slopes were analysed using segmented linear regression analysis
- Models contained 2 covariates:
 - to estimate overall GFR gradient
 - to assess the magnitude of change in gradient post-transfer
- Follow up truncated at 2 yrs. pre- & 4 yrs. post transfer to prevent patients with longer follow up becoming influential outliers
- Graft survival was assessed using Kaplan-Meier curves
- All analyses were performed using IBM SPSS 19
- ($p < 0.05$ statistical significance).

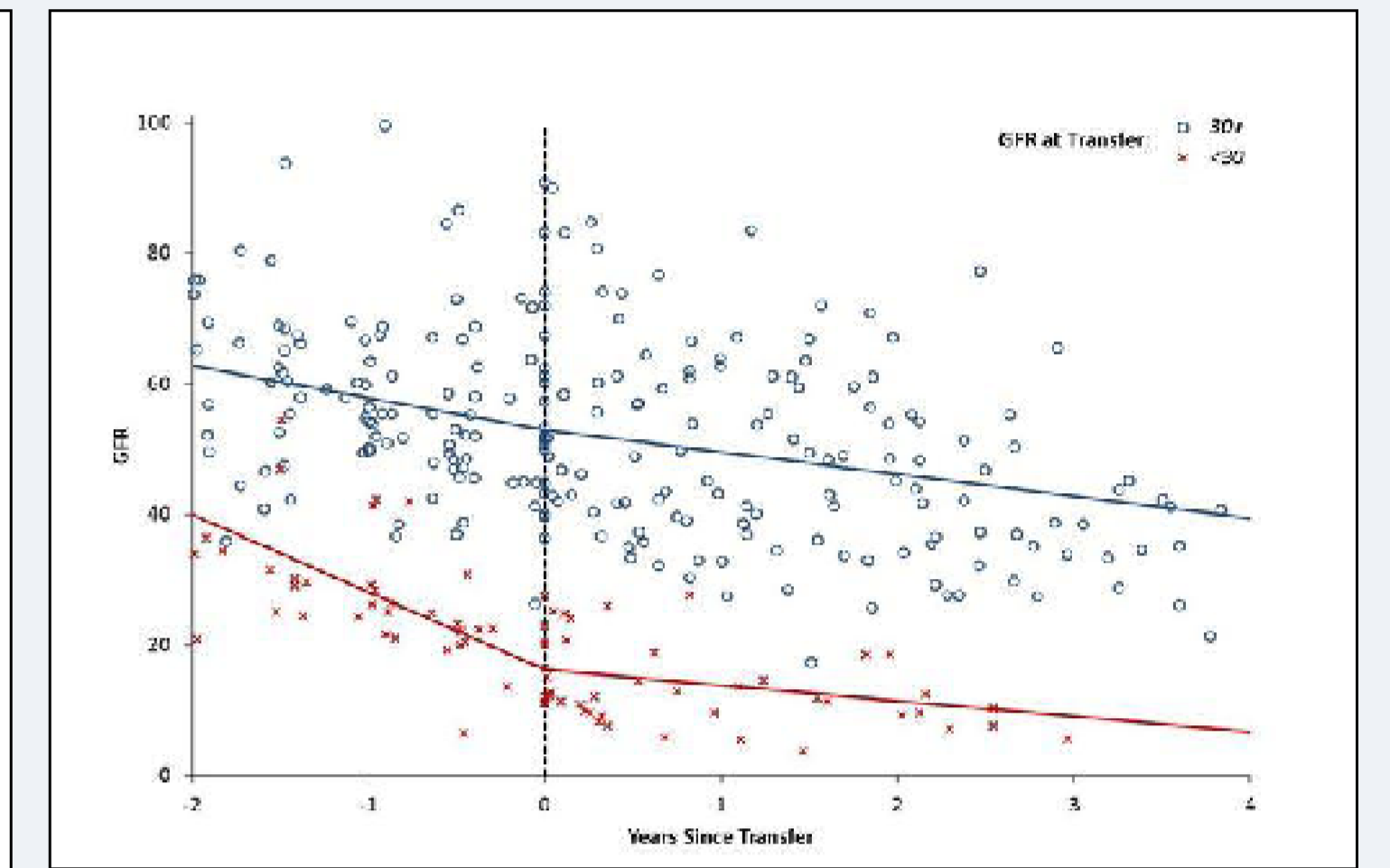
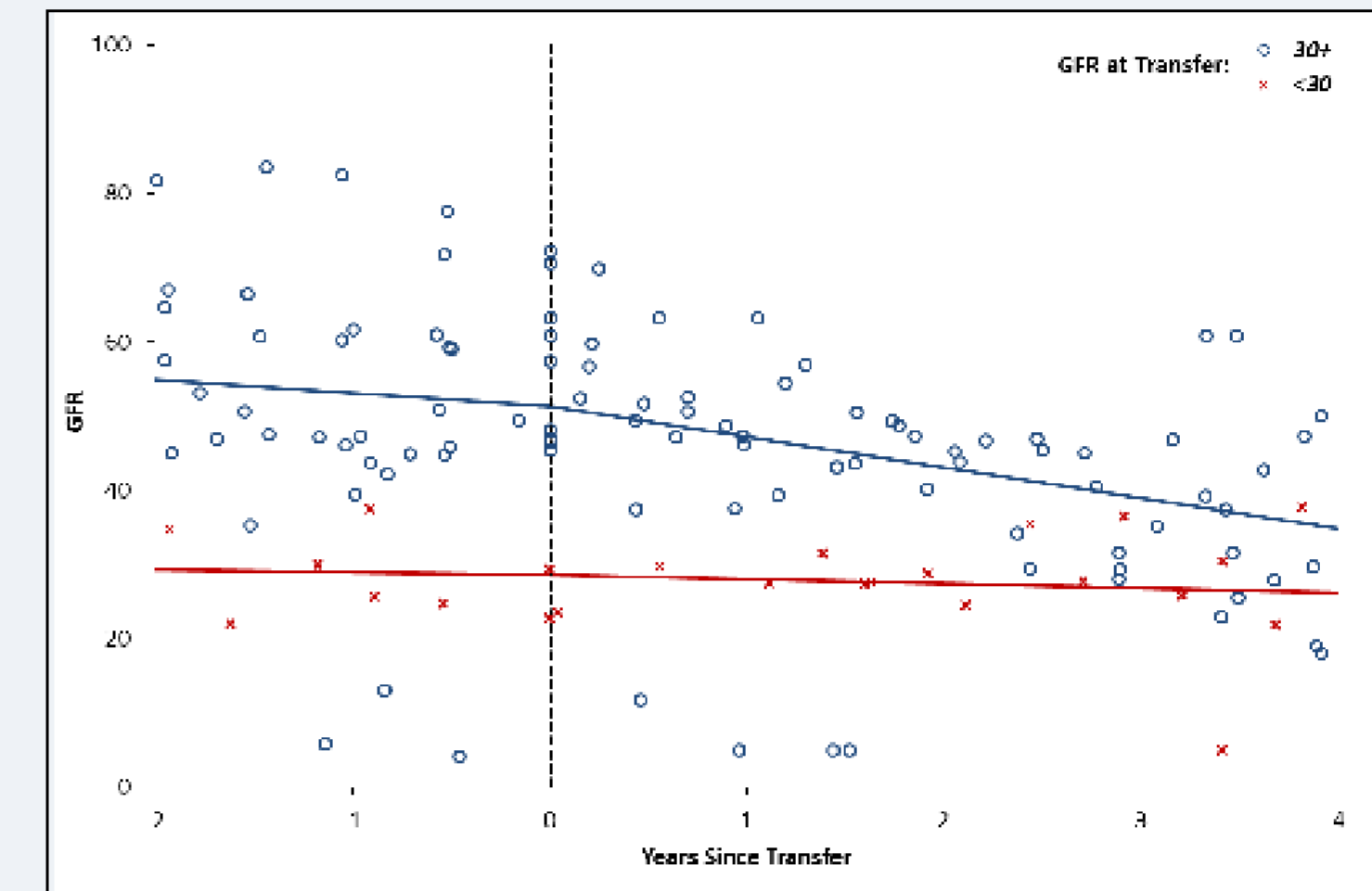
RESULTS

- 12 patients in non-transition groups and 30 patients in transition group
- Segmented regression analysis:
 - Significant difference in GFR gradients of groups in pre-transfer period ($p=0.007$), with transitioned patients having a faster initial decline of 7.1 ml/min/1.73m²/yr., compared to only 1.5/yr. in non-transitioned patients
 - After transfer, decline in transitioned patients slowed by 4.1 ml/min/1.73m²/yr. (i.e. to 3.0/yr.), whilst rate of decline increased in non-transitioned patients by an additional 1.9ml/min/1.73m²/yr. (i.e. to 3.4/yr.)
 - Changes in gradients differed significantly between transferred and non-transferred groups ($p=0.028$)



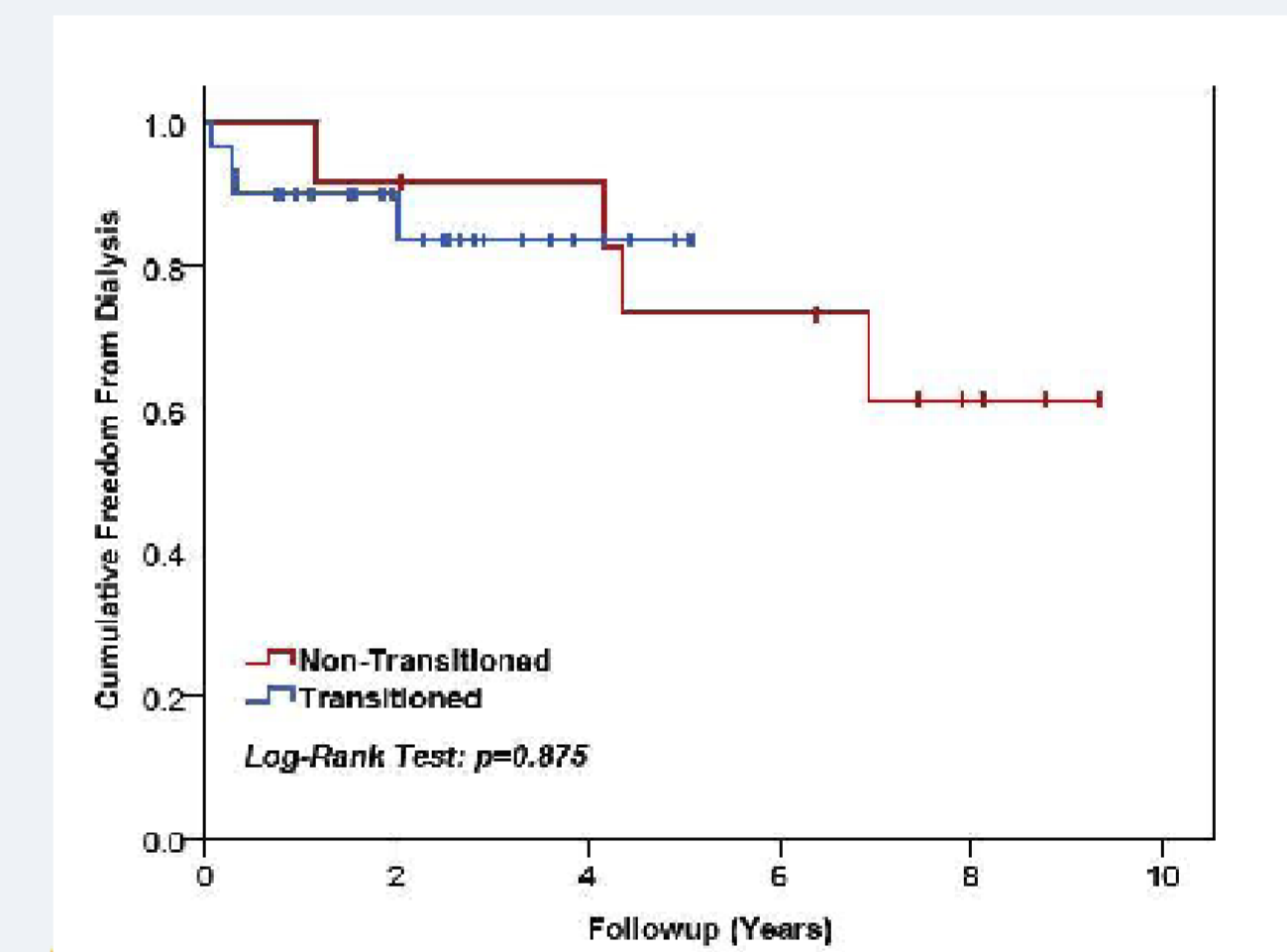
RESULTS: GFR curves

- There was a greater proportion of patients with a lower GFR (<30) at transfer in the transition group (8/30) compared to non-transition group (2/12).
- Therefore, subgroup analysis was performed for transitioned patients comparing those with GFR of <30 (n=8) & ≥30 (n=22) at transfer
 - Patients in the lower GFR group had a significantly faster decline pre-transition (gradient = -11.9 vs. -4.9 ml/min/1.73m²/yr., $p < 0.001$)
 - Post-transfer improvement in GFR <30 group was significantly greater than in GFR ≥ 30 group ($p=0.003$), resulting in gradients in two groups being similar after transfer (-2.4 vs. -3.4 ml/min/1.73m²/yr.).

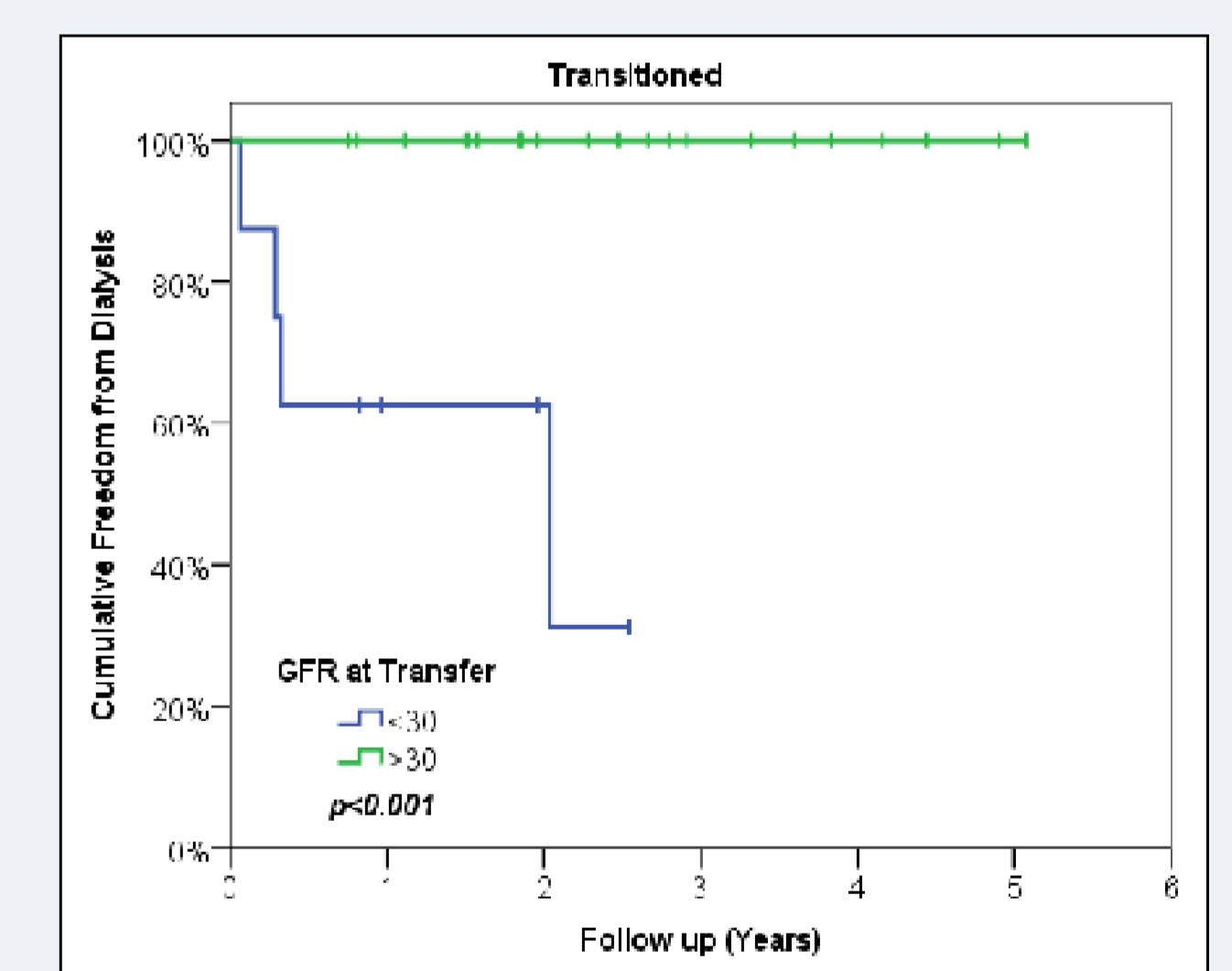
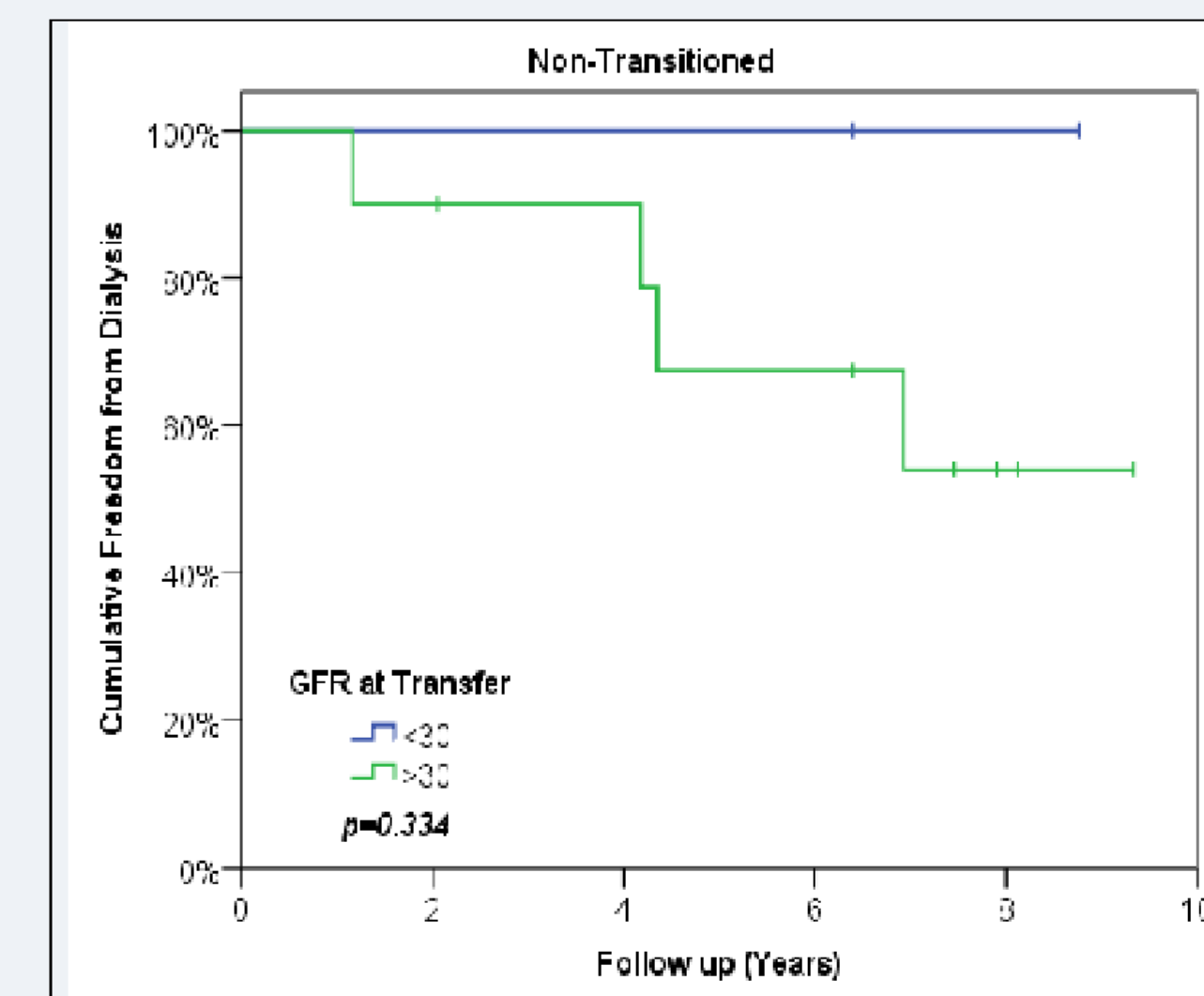


RESULTS: KM Curves

Overall, there was no significant difference in graft survival between transition & non-transitioned groups at 5 yrs. follow up with 83% & 75%, respectively ($p=0.875$).



However, stratification of patients according to GFR at transfer shows that patients with GFR >30 at transfer in transition group had 100% renal survival but not those in non-transition group



CONCLUSIONS

- Transition group had a significantly faster GFR decline pre-transfer to adult care than non-transitioned patients and this decline was slowed at transition
- Non-transition GFRs declined hastened after transfer to adult care
- In the transitioned group, patients with GFR < 30 at transfer showed the best improvement in GFR gradient post-transfer
- Renal survival for transition group with GFR >30 at transfer to adult care had 100 % renal survival
- The transition service is associated with a beneficial effect on GFR gradients, especially for those with a low GFR at transfer, as well as renal survival especially for those that transfer with GFR >30 to adult care.

