

OUTCOMES OF LIVING UNRELATED ABO BLOOD TYPE INCOMPATIBLE KIDNEY TRANSPLANTS

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OBJECTIVES

Due to the severe shortage of deceased-donor kidneys in Japan, ABO incompatible (ABOi) living-donor kidney transplantation (LKT) has been performed since the late 1980s. The rate of graft survival in ABOi LKT recipients is currently similar to that in ABO compatible LKT recipients. Recently, ABOi LKT has been performed in patients with various backgrounds such as unrelated combinations. We compared the results of ABOi unrelated LKT with those of ABOi related LKT.

METHODS

- Thirty-four consecutive unrelated ABOi LKT recipients included.
- Recipients were divided into two groups:
 - G1 (unrelated donors, n=23), G2 (related donors, n=11)
- All of unrelated donors were spouses.
- Tacrolimus or cyclosporine (CNI), mycophenolate mofetil (MMF), and methylprednisolone (MP) were the initial and maintenance immunosuppressants.
- Basiliximab (BXM) was administered on the operative day and postoperative day 4.
- Splenectomy was performed at the time of transplantation(KTx) except for 12 patients (G1: N=7, G2: N=5) who received Rituximab(RIT).
- All recipients underwent anti A/B antibody removal with plasmapheresis (DFPP or PE) until pre-anti A/B IgG < 16.

34 ABOi LKT recipients:

→
G1: unrelated donors, N=23
G2: related donors, N=11

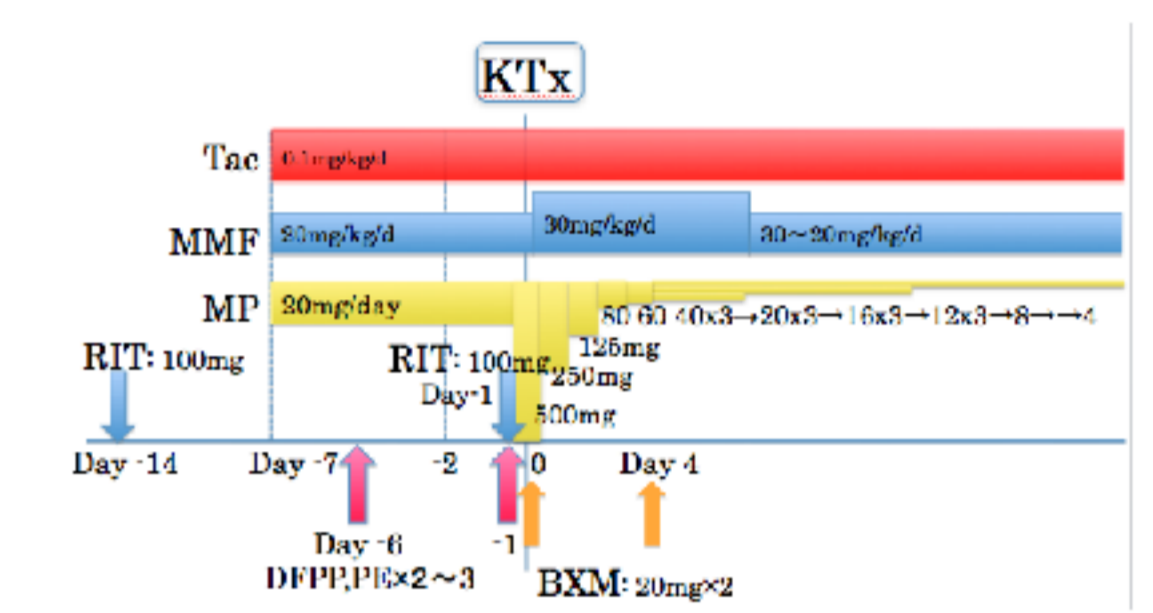


Fig. 1 Immunosuppression Protocol

RESULTS

Table 1 Patient characteristics

| | G1 (N = 23) | G2 (N = 11) | P |
|-----------------------------|-------------|-------------|--------|
| Recipient age (yrs) | 57.1 ± 7.4 | 39.8 ± 14.7 | < 0.01 |
| Recipient sex (M / F) | 11 / 12 | 6 / 5 | NS |
| Donor age (yrs) | 63.4 ± 5.0 | 54.1 ± 10.4 | < 0.01 |
| Donor sex (M / F) | 12 / 11 | 0 / 11 | < 0.01 |
| Duration of dialysis (mo) | 54.0 ± 58.2 | 24.6 ± 24.2 | 0.03 |
| HLA AB-mismatch | 2.3 ± 1.1 | 2.1 ± 1.2 | NS |
| HLA DR-mismatch | 1.6 ± 0.7 | 0.7 ± 0.6 | < 0.01 |
| CMV serostatus (D(+)->R(+)) | 23 (100%) | 11 (100%) | NS |
| No. of DFPP or PE | 2.4 ± 0.5 | 2.5 ± 0.7 | NS |

Table 2 Primary disease of CRF

| | G1 (N = 23) | G2 (N = 11) |
|------------------------|-------------|-------------|
| Glomerulonephritis | 5 | 1 |
| Diabetes mellitus | 5 | 1 |
| IgA nephropathy | 2 | 4 |
| ADPKD | 1 | 2 |
| Nephrosclerosis | 2 | 0 |
| Membranous nephropathy | 1 | 1 |
| Gouty nephropathy | 1 | 0 |
| Unknown | 6 | 2 |

Table 3 Complications

| | G1 (N = 23) | G2 (N = 11) | P |
|-------------------------------|------------------|------------------|-----------|
| ARE | 4 (17.4%) | 2 (18.1%) | NS |
| Borderline Changes | 1 | 1 | |
| T-cell Rejection | 3 | | |
| Antibody Mediated Rejection | | 1 | |
| CMV infection | 16(69.6%) | 8(72.7%) | NS |
| Antigenemia | 15 | 8 | |
| With symptom | 1 | | |
| Surgical complications | 5 (21.7%) | 2 (18.1%) | NS |
| Urineleakage | 3 | 1 | |
| Hematoma | | 1 | |
| Bacterial UTI | 2 | | |
| DGF | 2 (8.7%) | 1 (9.1%) | NS |

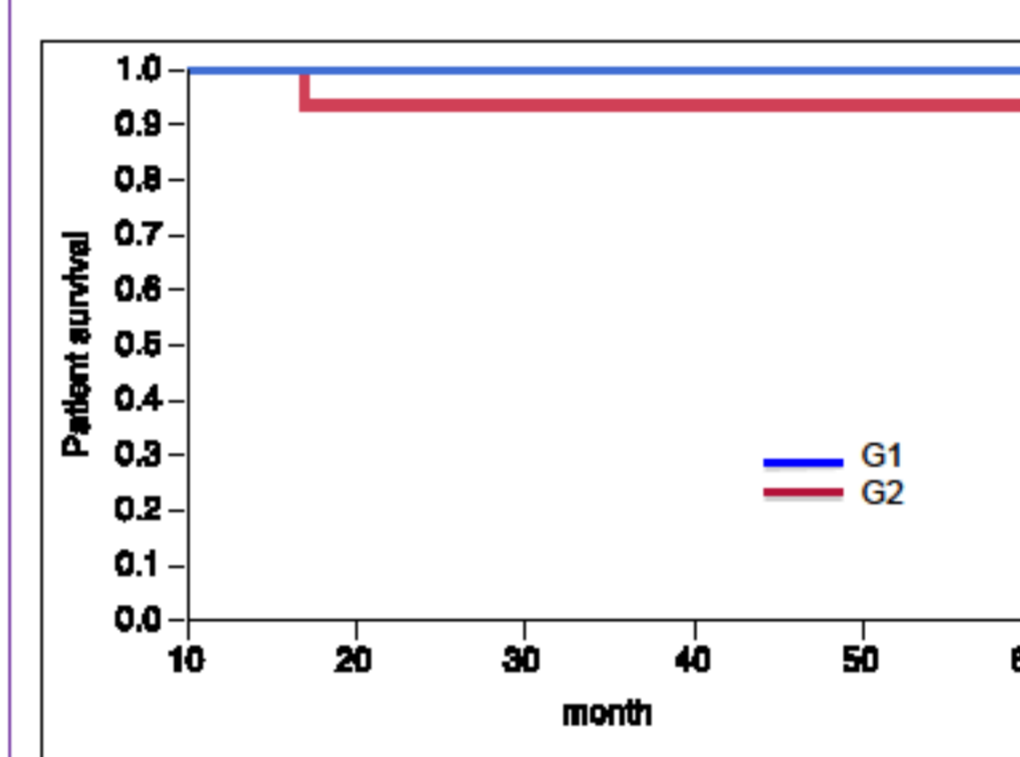
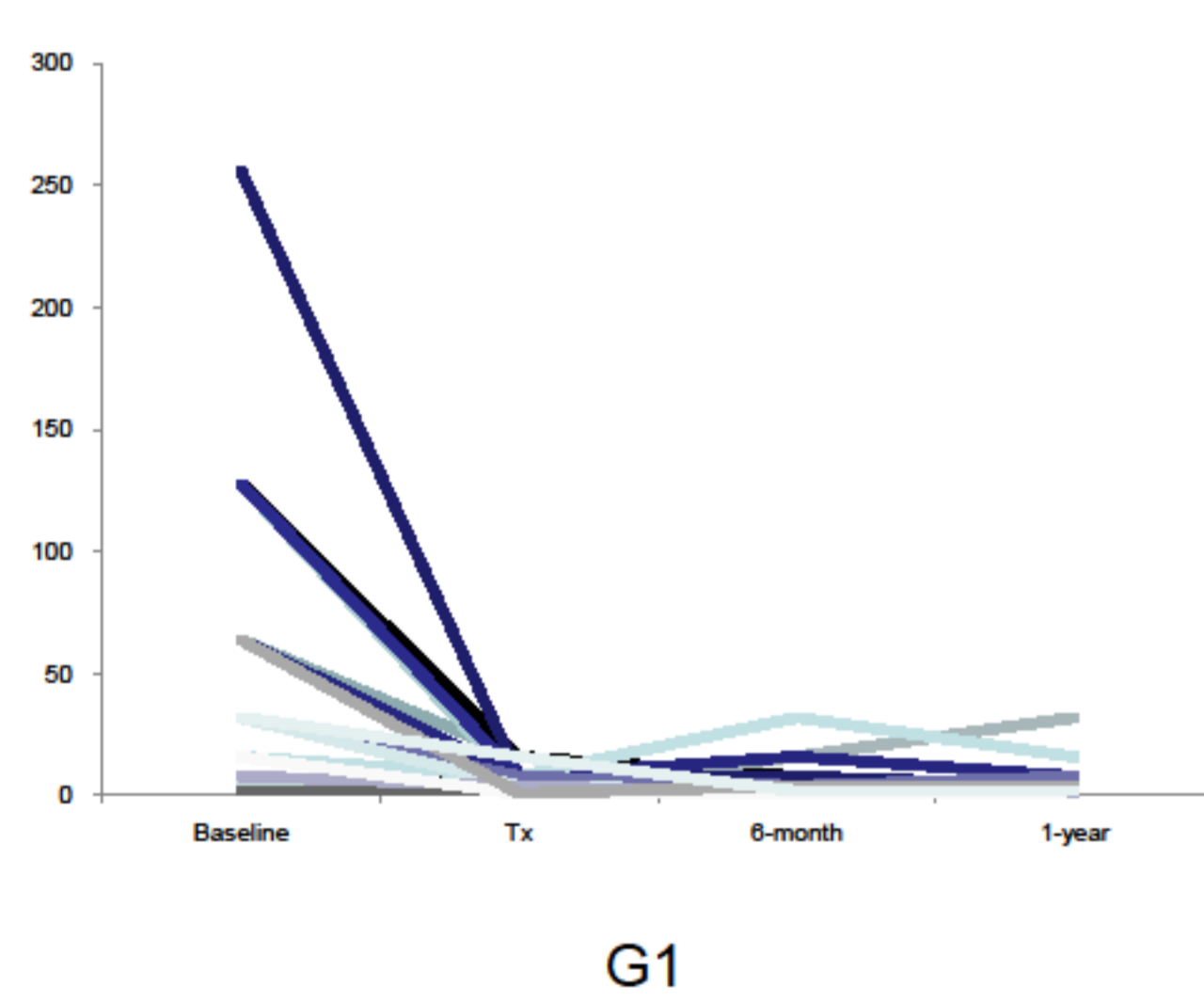


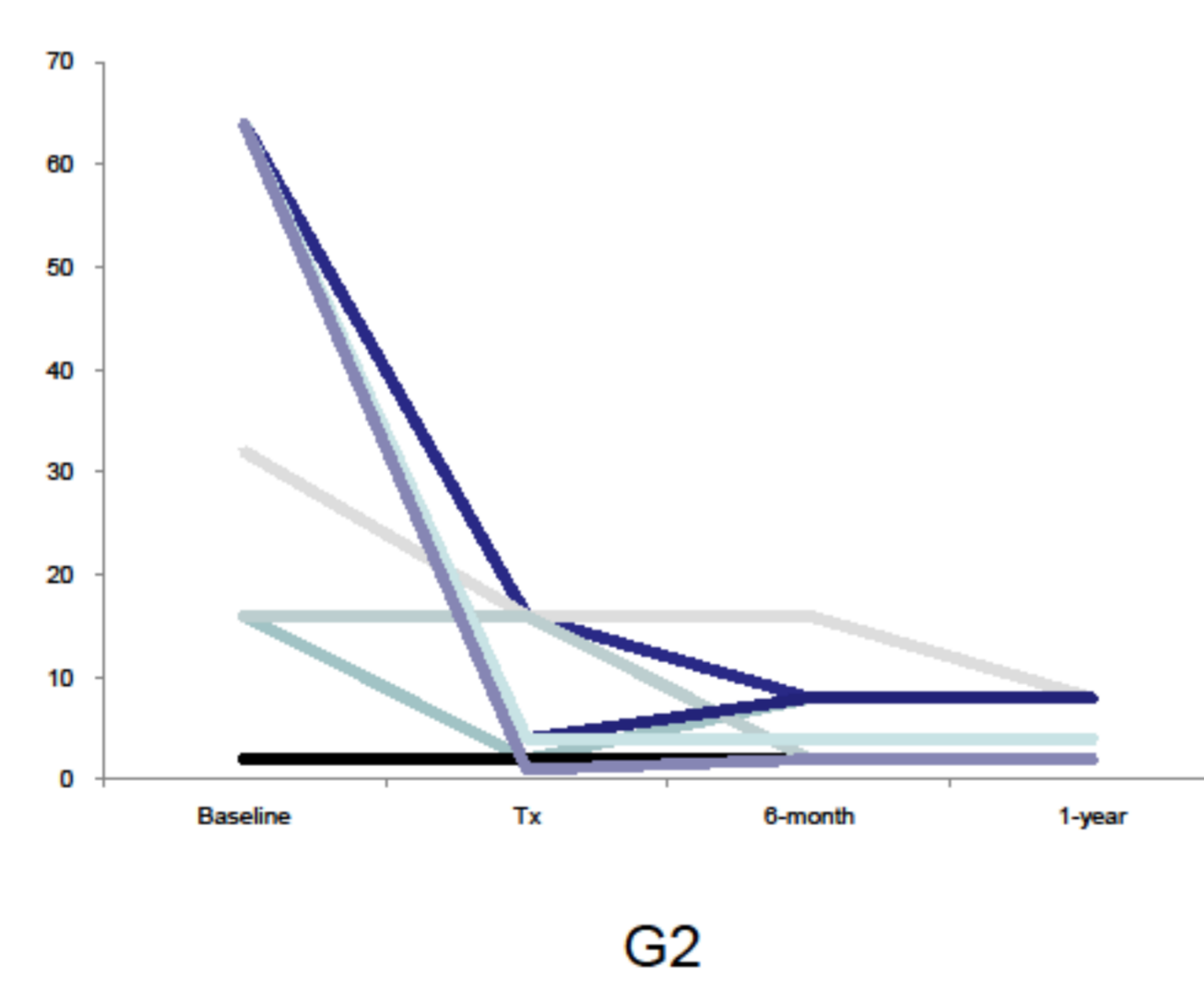
Fig. 4 Patient survival

- The patient survival was 100% at 5 years in G1, 100% at 1 year and 90% at 5 years in G2.
- Five-year graft survival was 100% in both groups.

- Five-year patient and graft survivals, GFR after KTx, acute rejection episode (ARE), cytomegalovirus (CMV) infection, and surgical complications (urine leakage, hematoma, bacterial UTI) were the same in both groups.
- G1 received older donor kidneys and longer dialysis therapy compared to G2.
- Older age of donor or long-term dialysis therapy did not impair the outcomes in G1.
- The incidence of DGF was also the same in both groups.

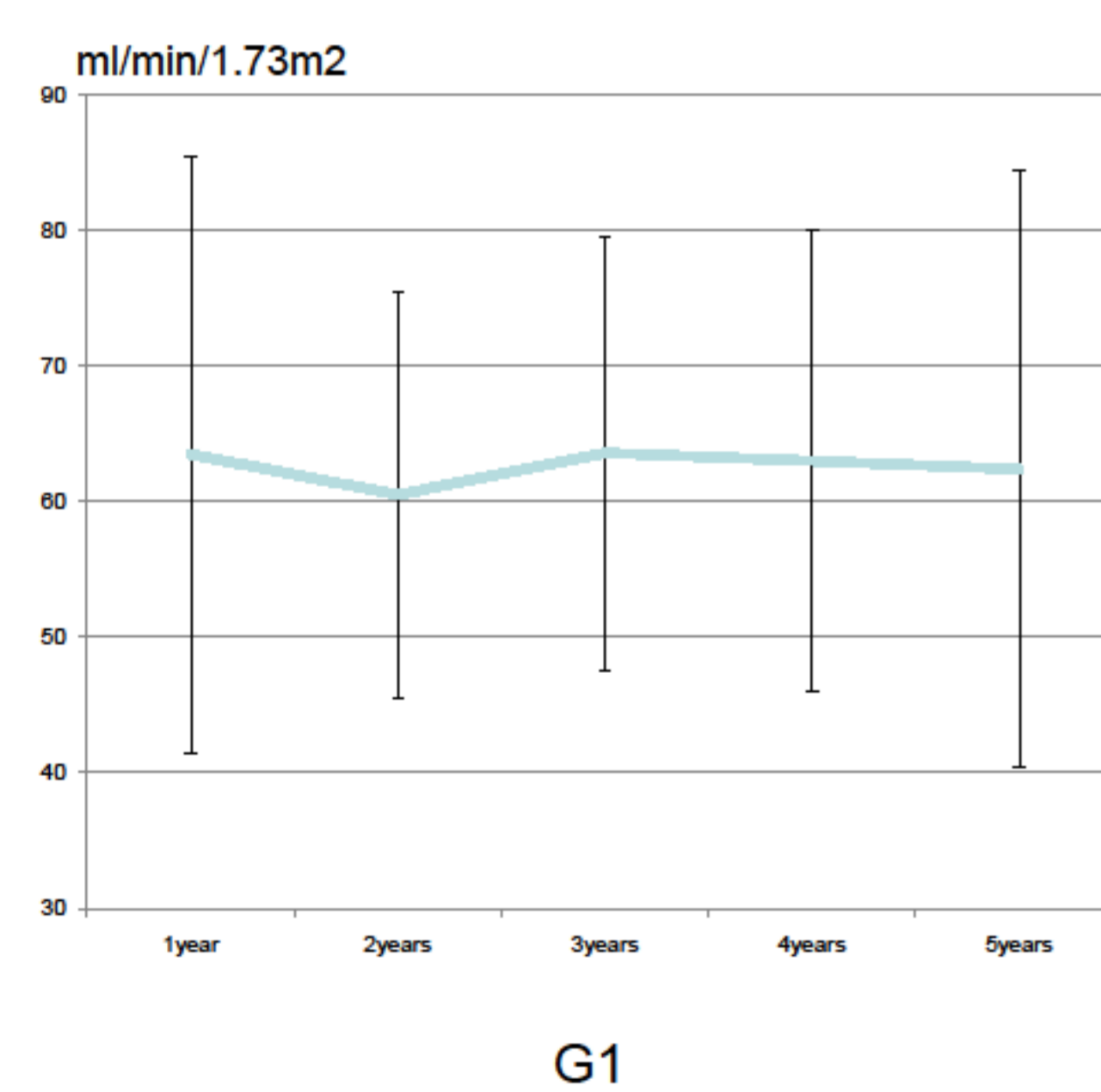


G1

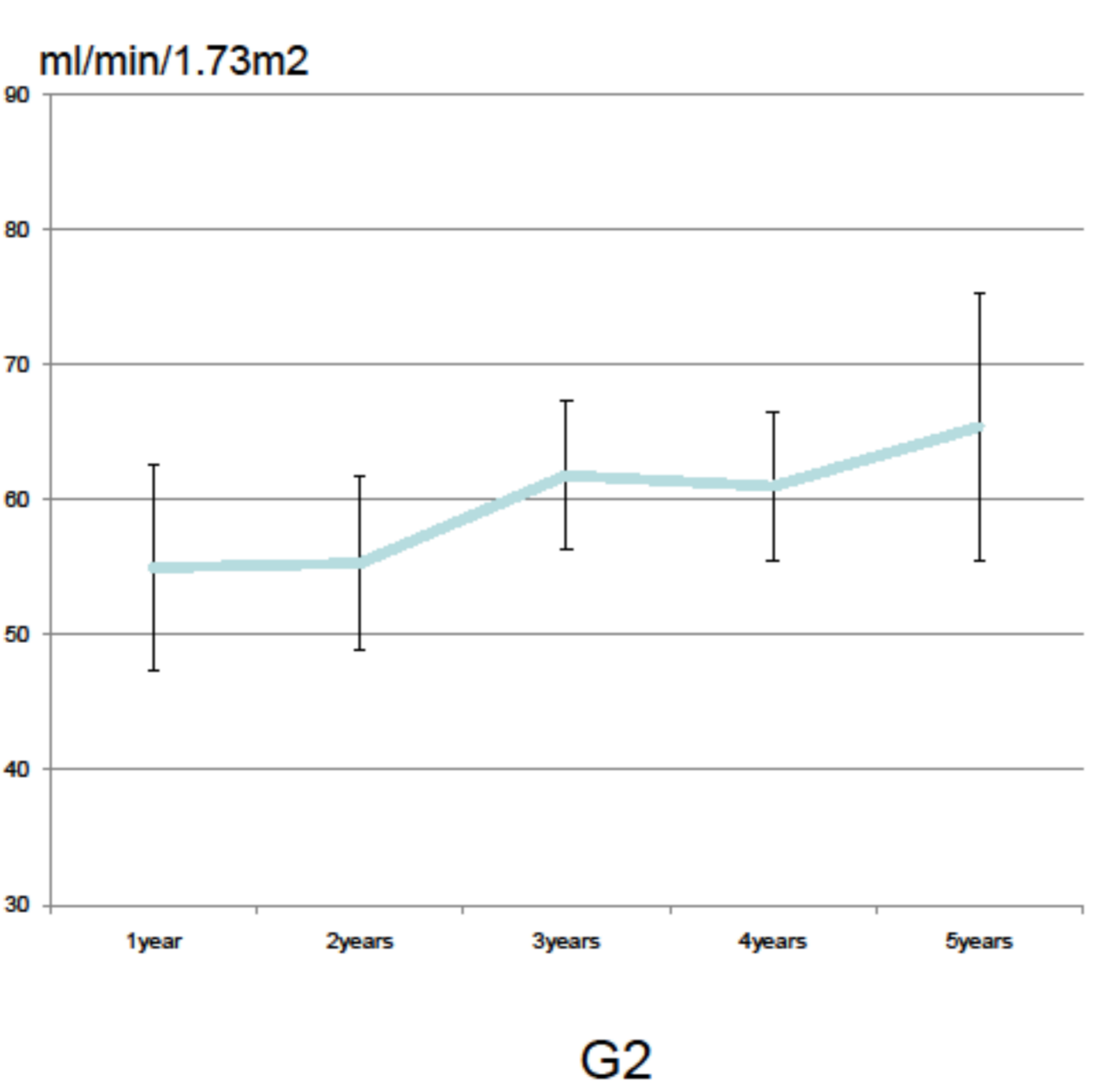


G2

Fig. 2 Anti A/B IgG titer



G1



G2

Fig. 3 Recipient GFR

CONCLUSION

Unrelated donor kidney had no negative impact on the outcome of ABOi LKT

