

Should Failed Allografts be Removed?

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Current Practice

- Leave failed allograft *in situ*,
UNLESS:
 - Symptoms: pain, fever, infection, hematuria
 - Severe hypertension not controlled medically

Leaving Failed Allografts *in situ*

- No surgery
- Provide residual renal function even if patient on dialysis
- Act as a “sponge” for anti-HLA antibodies
- Need for continued immunosuppression if re-transplant contemplated

Advantages of Removing Failed Allografts

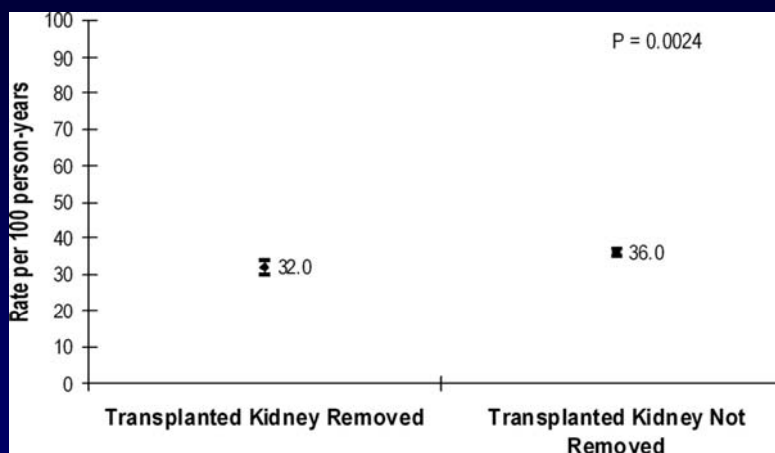
- Improved patient survival on dialysis
- Less inflammation ie. response to EPO, increased albumin
- Knowledge of sensitization status
- Only 15% of patients re-transplanted

Transplant Nephrectomy Improves Survival on Long-term Dialysis

Ayus et al., *JASN* 21:374, 2010

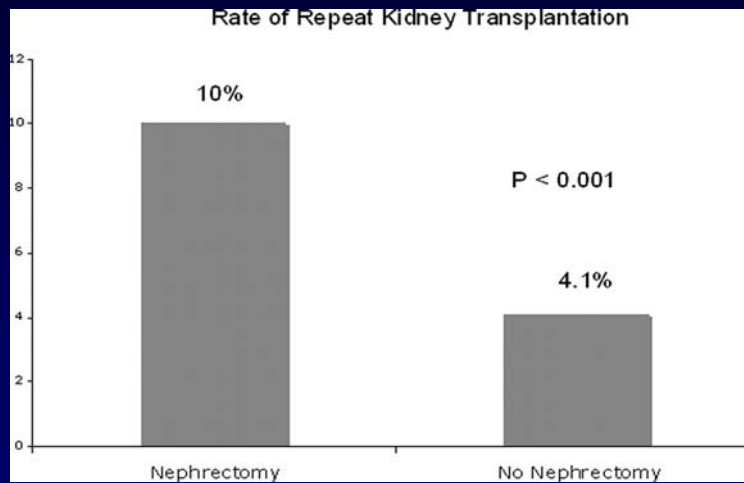
- USRDS: All patients returning to dialysis, 1994-2004, n=10,951 (34.6% died during follow/up)
- 31.5% received allograft nephrectomy
- Allograft nephrectomy decreased RR for death by 32%
- Mortality rate from nephrectomy was 1.5%

Unadjusted rate of death from any cause associated with or without receipt of renal allograft nephrectomy in 10,951 patients returning to maintenance dialysis after a failed kidney transplant between January 1, 1994, and December 31, 2004, is shown



Ayus, J. C. et al. *J Am Soc Nephrol* 2010;21:374-380

Unadjusted rate of repeat transplantation associated with or without receipt of previous renal allograft nephrectomy in 10,951 patients returning to maintenance dialysis after a failed kidney transplant between January 1, 1994, and December 31, 2004, is shown



Ayus, J. C. et al. *J Am Soc Nephrol* 2010;21:374-380

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JASN

Weaknesses of Ayus et al. Schaeffer and Helderman *JASN* 21:207, 2010

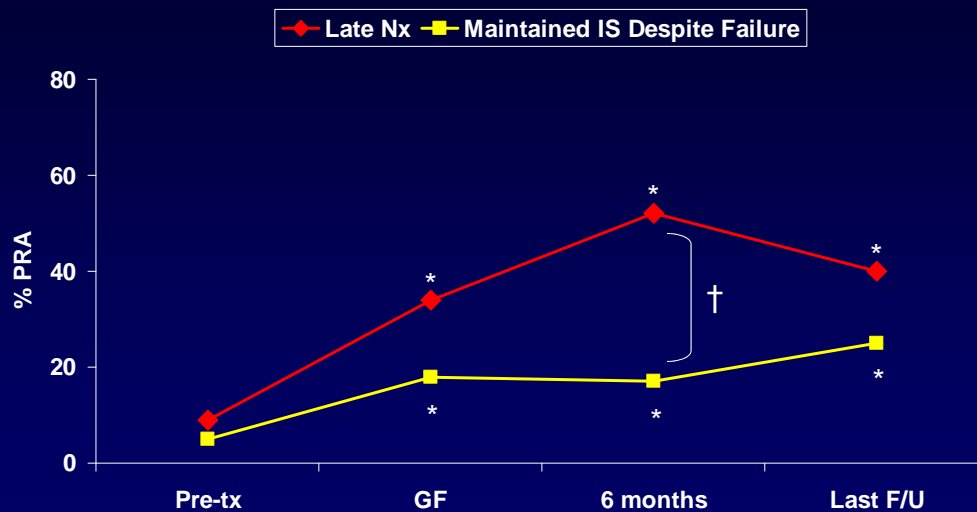
- Nephrectomy patients younger with fewer comorbidities
- ? Treatment selection bias

Allograft Nephrectomy vs. Weaning of Immunosuppression

Sener et al., *Clin Transplant* 2010

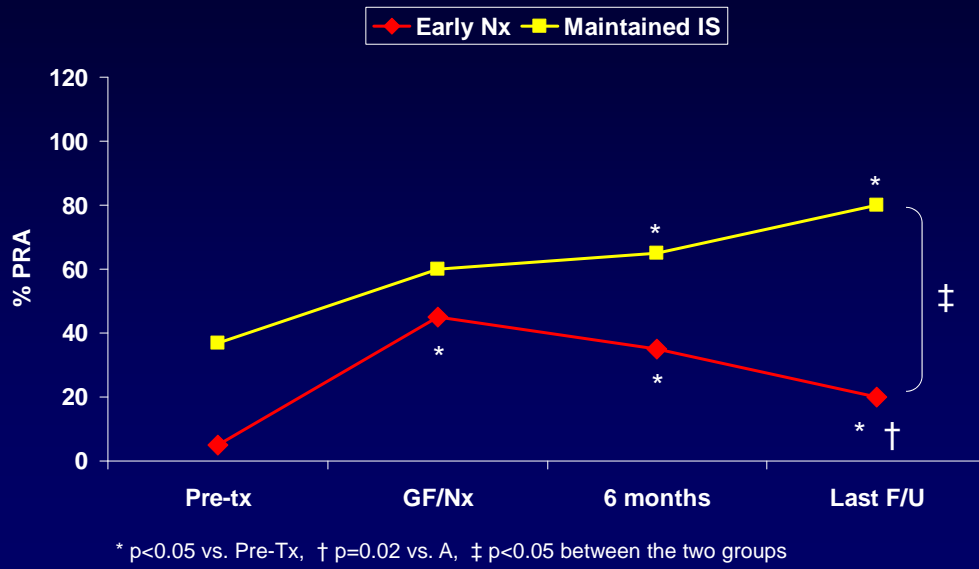
- 132 patients: Median follow-up 4 years
- Early nephrectomy (< 6 months)
 - PRA 46% → 27%
- Late nephrectomy: PRA continued to rise with and without immunosuppression

Sener et al.

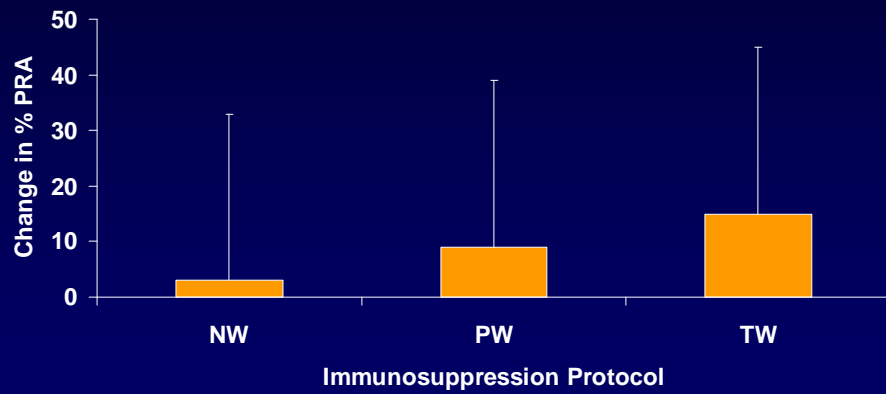


*p<0.05 vs. Pre-Tx, †p<0.05 between the two groups

Sener et al.



Sener et al.



Immunosuppression and Sensitization after Allograft Loss Scornick et al., AST 2010

- 104 patients with graft loss (only 3 pre-sensitized)
- 70% developed antibodies
- HLA A, B mismatching promoted sensitization
- Antibodies did not develop with adequate immunosuppression with or without nephrectomy

Impact of Transplant Nephrectomy on Peak PRA and Outcome after Retransplant Tittlebach-Helmrich, AST 2010

- Nephrectomy (245) vs. No Nephrectomy (60)
 - Average follow-up: 7.8 years
 - **Patient Survival**
- | | 1 Year (%) | 5 Year (%) |
|----------------|------------|------------|
| Nephrectomy | 94 | 86 |
| No Nephrectomy | 79 | 73 |
- PRA increased with nephrectomy but dropped prior to transplant
 - No nephrectomy did better when transplanted within 1 year

Conclusions

- Early transplant nephrectomy improves patient survival on dialysis and success of retransplant
- If nephrectomy is not performed immunosuppression is necessary to prevent antibody formation
- Elective nephrectomy in asymptomatic patients with failed transplant needs a prospective study