| Post-transplant outcomes | | Low pre-transplant sCD30 (<100 U/ml) (n=79) | | High pre-transplant sCD30 (≥100 U/ml) (n=81)* | | |
|---|---|---|---|---|---|---|
| | | Rapid decrement (n=44) | Slow decrement (n=35) | Rapid decrement (n=31) | Slow decrement (n=51) | |
| | | No.(%) | No.(%) | No.(%) | No.(%) | p-value |
| Graft failure | | 0 | 0 | 1 (3.2) | 2 (3.9) | 0.392 |
| Acute rejection | Biopsy-proven AR-free | 40 (90.9) | 33 (100) | 27 (87.1) | 41 (80.4) | 0.039 |
| | Biopsy-proven AR+ | 4 (9.1) | 0 | 4 (12.9) | 10 (19.6) | |
| | cellular | 4 (9.1) | 0 | 3 (9.7) | 6 (11.8) | |
| | humeral | 0 | 0 | 1 (3.2) | 4 ( 7.8) | |
| DGF | DGF-free | 44 | 35 | 30 | 46 | 0.040 |
| | DGF(+) | 0 | 0 | 1 ( 3.2) | 5 ( 9.8) | |

* One case was excluded due to missing post-transplant sCD30 data.

Rapid and slow decrement means ratio of sCD30 level at POD #4-5 versus pre-transplant level

< 20% and ≥ 20%, respectively

AR: Acute rejection, DGF: Delayed graft function

Pre-transplant sCD30 level, not post-transplant change of sCD30 level, is related with the incidence of biopsy-proven acute rejection.

## Abstract# 642 Poster Board #-Session: P57-I

**Impact of Native End Stage Renal Disease on Kidney Allograft Outcomes: Rejection or Infection? A Multivariate Analysis.** Rajinder P. Singh,[1] Alan Farney,[1] Jeffrey Rogers,[1] Jack M. Zuckerman,[1] Michael Gautreaux,[1] Samy Iskandar,[3] Patricia Adams,[2] Robert Stratta.[1] [1]*General Surgery;* [2]*Internal Medicine;* [3]*Pathology, Wake Forest University Baptist Medical Center, Winston-Salem, NC.*

Systemic influence of diabetes, or immunologic mechanisms in lupus, glomerulonephritis among others can also affect transplanted kidney similar to native kidneys. However, some native kidneys are lost without systemic pathology such as reflux, polycystic kidneys and drug toxicity. Does end stage renal disease etiology influence kidney allograft outcomes? **Methods:** Retrospective study of 459 consecutive deceased donor KTs performed at a single center from 10/2001 to 09/2007. Patients (pts) were divided into 3 cohorts according to native end stage renal disease (ESRD): Group A- ESRD due to DM mellitus (30%); Group B- ERSD due to glomerulonephritis, systemic vasculitides, hypertension or unknown (54%); Group C- ESRD due to non-systemic conditions: polycystic kidneys, reflux disease or drug toxicity (16%). Transplant parameters and outcomes were compared with univariate followed by multivariate analysis. Mean follow-up was 23 (0.9) months. **Results:** Mortality (13% vs 3% vs 5%) and death with functioning graft (13% vs 3% vs 5%) rates were higher in Group A compared to Groups B and C. Although death-censored graft loss (GL) was slightly greater in Groups A and B compared to Group C (11% vs 13% vs 6%), the proportion of GL due to acute rejection (AR) was significantly greater in Group B compared to Groups A and C (27% vs 3% and 0%, respectively, p= 0.001). Delayed graft function (DGF) rates were similar, but AR rates were slightly greater in Group B compared to Groups A and C (20% vs 16% and 12%). Bacterial infections were significantly greater in Group A (23% vs 13% and 19%, p= 0.03). Mean serum creatinine level at 1 year was significantly lower in Group C compared to Groups A and B (1.5 vs 1.8 and 1.5 mg/dl, p=0.02). On multivariate analysis in younger (<60) KT pts, the following RF for developing AR were significant: Group B ESRD (p= 0.024; OR 4.3); and presence of antibody (p=0.03, OR 2.4), whereas in older (≥60) KT pts, the following association was significant: CMV infection (p=0.05, OR 6.6).

**Conclusion:** ESRD due to immunological causes are more prone to develop AR, especially in young pts. ESRD due to non-systemic causes have better graft function, are less prone to AR, but more susceptible to complications of overimmunosuppression, especially in the elderly. Diabetics have more infections.

## Abstract# 643 Poster Board #-Session: P58-I

**Impact of CMV Infection on Acute Rejection: A Systematic Analysis in Patients with Protocol Biopsies.** Uta Erdbruegger,[1] Irina Scheffner,[1] Michael Mengel,[2] Anke Schwarz,[1] Hermann Haller,[1] Wilfried Gwinner.[1] [1]*Dep. of Internal Medicine, Div. of Nephrology, Hannover Medical School, Hannover, Lower Saxony, Germany;* [2]*Dep. of Internal Medicine, Div. of Nephrology, University of Alberta, Edmonton, AB, Canada.*

Cytomegalovirus (CMV) infection is a frequent complication in the early post-transplant course. The impact of CMV infection on acute rejection (AR) has not been examined systematically. The purpose of this study was to address this question in serial protocol biopsies.

We studied 577 patients (pts) who had a protocol biopsy at 6 weeks, 3 and 6 months post-transplant, diagnostic biopsies were included in the analysis. Biopsies were evaluated according to the updated Banff classification. CMV infection was diagnosed by CMV antigenemia test.

CMV infection was diagnosed in 155 of 577 pts in the first year after transplantation, mostly within the first 3 months. 27% of pts with CMV infection had recurrent disease and 27% were symptomatic. The rate of CMV infection was dependent on CMV IgG donor and recipient status, and highest among individuals with negative CMV IgG serostatus and a CMV-positive donor (35.3%) and donor-positive/recipient-positive patients (37.05%).

The incidence of AR episodes in protocol biopsies was not higher in pts with CMV infection compared to pts without CMV. In contrast, significantly more rejection episodes were found in diagnostic biopsies of pts with CMV infection (52% vs. 36% in pts without CMV infection; p=0.03). Both, CMV episodes before rejection and rejection with subsequent CMV were observed, with a predominance of CMV infection occurring before (p<0.05).

Compared to pts without CMV pts with CMV infection demonstrated moderately decreased renal function from the beginning, especially pts with symptomatic and recurrent CMV infection (without CMV: median 52 ml/min; with CMV 44 ml/min; p=0.001). Yet, renal function of pts with CMV infection remained stable without further deterioration for three years (p=0.153).

Our results indicate a relationship between CMV infection and acute T-cell mediated tubulo-interstitial rejection episodes. Pts with CMV infection have moderately decreased renal function from the beginning without further deterioration. It remains to be determined if more effective treatment can influence the outcome of these patients.

## Abstract# 644 Poster Board #-Session: P59-I

**Estimated GFR after Treatment of Acute Rejection: A Surrogate Marker for Long-Term Graft Survival after Kidney Transplantation.** M. Cantarovich, S. Paraskevas, P. Chaudhury, D. Baran, D. Keith, D. Vrochides, M. Hassanian, P. Metrakos, J. Tchervenkov, M. Lipman, R. Mangel, M. Ladouceur. *McGill University Health Center, Montreal, QC, Canada.*

Purpose: To determine the usefulness of the estimated GFR (eGFR) after treatment of acute rejection (AR) as a surrogate of long-term graft survival after kidney transplantation (KTx). Methods: We analyzed 603 pts (49±13 yrs-old), recipients of KTx between 05/1997 and 03/2007. Eighty pts with a first biopsy-proven AR were divided into 2 groups (Gr.), based on the post-AR eGFR (MDRD equation). Gr.1 included pts whose eGFR returned to within 10% of pre-AR values within 3 months post-AR treatment. Gr.2 included pts whose eGFR did not improve to within 10% of pre-AR values. In a separate analysis, pts were divided according to the baseline CNI. Results: Pt survival at 1, 5 and 10 yrs was 96%, 90% and 82% in non-rejectors, and 98%, 91% and 76% in rejectors. Pt survival at 1, 5 and 10 yrs was 100%, 90% and 80% in Gr.1 and 97%, 93%, 65% in Gr.2. Graft survival at 1, 5 and 10 yrs was 92%, 85%, 73% in non-rejectors and 91%, 73% and 51% in rejectors. Graft survival at 1, 5 and 10 yrs was 94%, 81% and 66% in Gr.1 and 84%, 58% and 19% in Gr.2. A multivariate time-dependent graft survival analysis showed that AR status (HR 4.00, 95% CI [2.23-7.2], P<0.001), age at treatment of AR (HR 1.03, 95% CI [1.01-1.05], P=0.001), and Tac vs. CsA (HR 2.54, 95% CI [0.92-2.85], P=0.094) had an important effect on graft survival.

Table 1. Age-adjusted hazard ratio for patient and graft survival

| | Patient Survival | | Graft Survival | |
|---|---|---|---|---|
| | HR [95%CI] | P | HR [95%CI] | P |
| Rejectors vs. Non-rejectors | 1.74 [0.84-3.61] | 0.14 | 4.33 [2.64-7.10] | <0.001 |
| Gr.1 vs. Non-rejectors | 1.99 [0.78-5.10] | 0.15 | 2.11 [0.90-4.97] | 0.09 |
| Gr.1 vs. Gr.2 | 0.77 [0.20-3.02] | 0.77 | 0.42 [0.18-0.96] | 0.04 |
| Rejectors CsA vs. Tac | N/A | N/A | 1.57 [0.63-3.89] | 0.33 |

Conclusion: Pt survival was not influenced by AR status. An episode of AR portends a poor prognosis for long-term kidney graft survival. There was no significant difference in graft survival after AR in pts on Tac vs. CsA. In pts whose eGFR post-treatment of AR returned to within 10% of baseline, there was no significant difference in graft survival compared to pts that did not experience AR. The eGFR post-treatment of AR may be a useful surrogate marker of long-term kidney graft survival.

## Abstract# 645

**Abstract Withdrawn**