Abstract# B938

Pretransplant Anti-Angiotensin Type 1 Receptor Antibodies (Anti-AT1R) Can Predict Patients at High Risk of Post-Transplant Focal Segmental Glomerulosclerosis (FSGS) Recurrence.

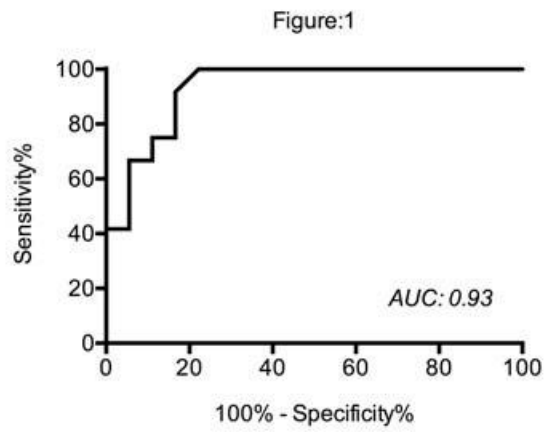M. Mujtaba, T. Taber, W. Goggins, N. Kassis, M. Yaqub, A. Khalil, J. Sher, M. Khalid,

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Approximately 30% of patients develop recurrence of FSGS in the first kidney allograft. The risk of recurrence with a second graft in patients who lost a first graft because of recurrence may approach 100%. Efforts are underway to identify biomarkers to predict patients at high risk of FSGS recurrence, who in turn may benefit from preemptive interventions e.g. plasmapheresis. AT1R is expressed on podocytes; their expression is elevated in the proteinuric state. AT1R antagonists ameliorate the peak level of proteinuria by preventing a reduction in the expression of slit diaphragm functional molecules. We retrospectively examined the pre-transplant sera of 29 patients with a history of rapidly progressive biopsy proven FSGS. Sera were tested for anti-AT1R antibodies by Enzyme linked immunoassay (One Lambda, Canoga Park, CA) under an IRB approved protocol. Patient demographics; Median age: 27 years, Male 22, White 15, African Americans 12, Median BMI 26, Median age at transplant 27, Repeat transplant 11, cause of prior transplant failure: FSGS recurrence, Patients with recurrence11, Median time to recurrence: 1.5 months. Unpaired t-test was used to compare anti-AT1R values in patients with and without recurrence with two tailed $p < 0.05$ considered to be signifi cant. A ROC curve was constructed to determine area under the cover and Youden Index was used to determine optimum cut point.

Results: Anti-AT1R antibodies in patients with and without post-transplant FSGS recurrence were 19.18 ± 3.75 vs. 6.29 ± 0.76 respectively (p=0.004).

Conclusion: Anti-AT1R antibody levels appear to be a helpful biomarker in identifying patient at high risk of post-transplant FSGS recurrence. These patients may benefit from preemptive plasmapheresis and early initiation of angiotensin converting enzyme inhibitor therapy. More studies are needed to confirm our findings.

Figure:1

ROC curve, pre-transplant anti AT1R levels as predictor of FSGS recurrence.The area under curve is 0.9329, with sensitivity and speficity of 83%,and a likelihood ratio 5.00 at an anti AT1R level of > 8.35 (determined by Maximum Youden Index).