[451] Association of the Non-HLA, AT1R Antibody, and Donor Specific HLA Antibodies to Renal Allograft Survival.

Laszlo Bihari, Jerome Saltarrelli, Jacqueline Lappin, Stephen Katz, Karoly Varga, Charles Van Buren, Daniel Cook, Harald Heidecke, Duska Dragun, Ronald Kerman. Surgery, University of Texas Medical School at Houston, Houston, TX; Celltrend Luckenwalde, Germany; Charite University Hospital, Germany

The non-HLA antibody (Ab) against the Angiotensin II Type 1 Receptor (AT1R) has been associated with severe non-HLA antibody mediated vascular rejection (AMR) in transplant (Tx) recipients (recips) with no donor HLA Ab (DSA). In this study we determined the impact of the presence of AT1R and/or DSA on graft survival in kidney allograft recips.
One hundred and four (104) pre/post-Tx sera were obtained from 52 Tx recips chosen for this study because of their rejection and graft loss histories. Post-Tx sera were obtained on the day of rejection (or ±1 day). DSA were identified in a Luminex-based single antigen bead assay, while the AT1R Ab units were identified by a cell-based ELISA assay. Of the 52 patients tested 43 had HTN, 4 GN, 3 IDDM and 2 FSGS as their original disease secondary to ESRD.
Pre-Tx AT1R units of 10±9, 8±5 and 10±5 for recips with AMR, acute cellular rejection (ACR) or no rejections respectively post-Tx were not significantly different. The frequency of patients with detectable AT1R was, however, significantly different in the groups (65% detectable with AMR vs 43% detectable with ACR and only 36% detectable in recips with no rejection, $p<0.01$ and $p<0.01$ respectively). Patients with neither AT1R or HLA Ab (pre/post-Tx) had a 100% three year graft survival (3YGS). Patients with only DSA had an 89% 3YGS. Patients with only AT1R Ab had a 67% 3YGS. Finally, patients with both AT1R and DSA (pre/post-Tx) had a 53% 3YGS. The 53% 3YGS for recips with both AT1R and DSA was significantly worse ($p<0.01$) than the 100% and 89% 3YGS for recips with neither Ab or only DSA Ab (respectively). Additionally, the 53% 3YGS was also significantly different ($p<0.05$) than the 67% 3YGS for recips with AT1R Ab only. Recipients with pre-Tx DSA only had an 89% 3YGS. In contrast, patients who had both DSA and AT1R Abs experienced a 53% 3YGS, ($p<0.01$). Patients with AT1R only had a 67% 3YGS. Therefore, the data are suggestive that AT1R Abs result in decreased long term survival, but if patients have both AT1R and DSA Abs they act synergistically to result in the poorest graft survival. Determining the presence of both a non-HLA (AT1R Ab) and donor specific HLA Ab (DSA) may be more informative of the patient's immune risk and may guide immunosuppressive therapy.
Keywords: Alloantibodies; Graft survival; HLA antibodies; Kidney transplantation

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