SUCCESSFUL REVERSAL OF SEVERE KIDNEY ALLOGRAFT REJECTION MEDIATED BY ANGIOTENSIN II TYPE 1-RECEPTOR

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Abstract:

Case Study: The patient is a non-sensitized 64 year-old African American male who received a split en bloc deceased donor kidney transplant with standard induction using solumedrol and basiliximab. Post-discharge his renal function remained stable with a baseline creatinine between 1.0-1.2 mg/dL. During this time he experienced severe GI side effects related to MMF which led to its temporary discontinuation for 2 weeks, followed by resumption at reduced dosage (250 mg BID). One week later, his creatinine acutely worsened from 1.0 to 3.1 mg/dL. The patient's allograft pathology showed mixed acute C4d+ antibody-mediated rejection (AMR) and cell-mediated rejection with transmural arteritis (Banff scores g1, t3, i3, v3, ptc1). Surprisingly, neither anti-HLA nor MICA antibodies were identified in any of his post-transplant sera. Further investigation uncovered anti-angiotensin II type-1 receptor antibodies (AT1R ab) and endothelial cell crossmatch (ECXM) positivity which correlated with the timing of his acute rejection. Fig. 1 illustrates the kinetics of the patient's AT1R ab level in relationship to his clinical course. Pre-transplant, high AT1R ab binding was detected at 18 U/ml (positive cutoff > 17 U/ml) - this reactivity increased to 27 U/ml on the day of his allograft biopsy. In parallel with this surge, the patient's creatinine deteriorated to a peak of 5.7 mg/dL necessitating temporary dialysis. Of note, his blood pressure which had been previously well-controlled converted to a state of hypertensive urgency requiring IV nicardipine infusion. He was treated aggressively with ATG, plasmapheresis, IVIG, and losartan. After one week of treatment his AT1R ab level became undetectable; remarkably, the patient also showed rapid clinical recovery and control of his blood pressure. Post-discharge his renal function returned to his previous baseline. He continues to take losartan for AT1R blockade and is treated with short courses of plasmapheresis and IVIG to reduce his anti-AT1R level as necessary. $$graphic_{274CF369-D2C6-4AAC-AD9C-4570C040E49B}$$

Session: Workshop 2: Solid Organ Immunotherapy/Rejection – , 9/29/2015 from 9/29/2015 to 9/29/2015