Anti-Angiotensin II Type 1-Receptor Antibodies Accelerate Late Renal Allograft Failure in the Absence or Presence of HLA Antibodies

Lachmann N.[1], Dragun D.[2], Todorova K.[1], Heidecke H.[3], Schulze H.[1], Schönemann C.[1]
[1]Charité-Universitätsmedizin Berlin, CC14, Tumor Medicine, HLA Laboratory, Berlin, Germany, [2]Charité-Universitätsmedizin Berlin, Department of Nephrology and Intensive Care Medicine, Berlin, Germany, [3]CellTrend GmbH, Luckenwalde, Germany

Antibodies directed against Angiotensin II type 1-repector (AT1R) are implicated in humoral rejection and inferior short-term outcomes. However, the impact of AT1R antibodies on renal allograft outcome and their interaction with anti-HLA antibodies late after transplantation is not well understood. Here we report on a longitudinal follow-up of anti-HLA and AT1R antibodies among kidney transplant patients and their impact on long-term clinical outcome.

A total of 189 renal transplant recipients were monitored for the presence of HLA and AT1R antibodies by Luminex Single Antigen beads and ELISA, respectively. Antibody testing was initiated on a median of 4.5 years posttransplant and at least two sera were analyzed. Mean follow-up after the first and last testing was 8 and 3 years, respectively. HLA antibodies were detected in 12% (22/189) which was associated with a decreased 8-year graft survival of 60% vs. 81% as compared to HLA negative patients. There was a significant additive negative impact on graft survival when AT1R antibodies were simultaneously detected with HLA antibodies, resulting in only 33% graft survival. Among HLA antibody negative patients AT1R antibody concentration at the time of first testing was not predictive for graft outcome. However, an increase of AT1R antibody titer over time negatively impacted allograft survival (64% vs. 88%) in otherwise HLA-antibody negative patients.

Our data implicate importance of screening for AT1R antibodies in predicting velocity of late allograft failure. The dynamic of AT1R antibodies in the absence of HLA antibodies rather than the antibody concentration at a certain time point late after transplantation is predictive for renal allograft outcome. The coincidence of HLA and AT1R antibodies revealed the most detrimental effect on graft survival.

Assigned speakers:

Nils Lachmann, Charité-Universitätsmedizin Berlin , Berlin , Germany