

HISTOPATHOLOGY OF BIOPSY IN PATIENTS WITH ANTI-ENDOTHELIAL CELL ANTIBODY AND ANGIOTENSIN II TYPE 1 R

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Abstract:

Aim: To compare the histologic characteristics of graft injury in the presence or absence of antibodies to endothelial cells (AECA) and angiotensin II type 1 receptor (AT1R-Ab). **Method:** 70 kidney recipients transplanted at the Johns Hopkins Comprehensive Transplant Center, between 1988 and 2014 were evaluated to investigate graft dysfunction. Biopsy proven rejection was defined according the Banff 2013 criteria. The specificity and level of donor specific HLA antibodies (HLA-DSA) were evaluated using HLA phenotype (Lifecodes, class I and II ID panels, Immucor, San Diego, CA) and single antigen bead panels (One Lambda, Canoga Park CA) performed on a Luminex platform. Non-HLA antibody detection was performed using quantitative ELISA (CellTrend GmbH, Luckenwalde, Germany) and precursor endothelial cell flow cytometric crossmatch, ECXM (XM-ONE Absorber AB, Stockholm, Sweden). **Results:** Patients were divided into three groups based on AT1R-Ab levels (positive >17 Units/ml; borderline 10-17 Units/mL and negative <10 Units/mL). AECA assessment was performed in patients whose HLA antibody was insufficient to be detected in the ECXM. There was no significant difference in patient and donor demographics among the three groups. At time of transplantation, HLA-DSA was present in 65%, 68%, and 64% of the patients in the three AT1R-Ab categories respectively. There was a greater number of positive ECXMs in the AT1R-Ab positive group compared to AT1R-Ab borderline and AT1R-Ab negative (24%, 9%, 12%). At 5 days post-transplantation, the average serum creatinine for AT1R-Ab positive, borderline and negative was 3.8, 2.3 and 1.3 respectively. At time of graft dysfunction, there was no significant difference in presence of HLA-DSA between the 3 groups (65%, 57%, 68%). The incidence of biopsy proven antibody mediated rejection was 41%, 26% and 17% for AT1R-Ab positive, borderline and negative. The average peritubular capillaritis (ptc) scores were significantly higher in the AT1R-Ab positive group compared to borderline and negative in patients who had HLA-DSA (2.3, 1.1, 0.6) and in patients with no HLA-DSA (1.7, 0.4, 0.2). **Conclusion:** This preliminary evaluation suggests that there is increased microvascular injury in the presence of AECA and AT1R-Ab.

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