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The impact of non-HLA antibodies directed against Endothelin-1 type A receptors (ETAR) on early renal transplant outcomes.

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Source

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Abstract

BACKGROUND:

Non-HLA antibodies (Abs) targeting vascular receptors are considered to have an influence on renal transplant injury. Anti-Endothelin-1 type A receptor antibodies (anti-ETAR) were associated with cellular and antibody-mediated rejection and early onset of vasculopathy in heart transplant patients but their role in renal transplantation remains unclear. The aim of our study was to assess the incidence and importance of anti-ETAR antibodies and their impact on renal transplant during the first year observation.

METHODS:

We evaluated the presence of anti-ETAR antibodies in 116 consecutive renal transplant recipients in pre- and post-transplant screening (before and in 1st, 3rd, 6th, 12th month after transplantation). Additionally, we assessed the presence of anti-HLA antibodies. Anti-ETAR antibodies were assayed by ELISA. The diagnosis of acute rejection was based on Banff criteria.

RESULTS:

Anti-ETAR antibodies were observed in 55 (47.4%) of the analyzed recipients before transplantation. The function of renal transplant was significantly worse in the anti-ETAR(+) group compared to the anti-ETAR(-) group during the first post-transplant year. One month after transplantation the serum creatinine in anti-ETAR (+) patients (pts) was 1.86 ± 0.8 mg/dl and 1.51 ± 0.5 in anti-ETAR(-) pts ($p=0.009$). Twelve months after transplantation the difference between the groups was still observed 1.70 ± 0.7 vs. 1.40 ± 0.4 ($p=0.04$). Biopsy proven acute rejection was recognized in 8/55 (14.5%) in ETAR(+) and 9/61 (14.8%) in ETAR(-) patients but cases with mild to severe intimal arteritis (v1-v3) were more often observed in patients with the presence of anti-ETAR Abs 4/55 (7.2%) comparing with 1/61 (1.6 %) in anti-ETAR(-) patients. The anti-ETAR Abs levels varied at different measurement intervals during the one-year follow-up.

CONCLUSIONS:

The presence of anti-ETAR antibodies is associated with a worse renal transplant function during the first 12 months after transplantation. Including anti-ETAR antibodies in the diagnostics of renal transplant recipient immune status should be considered to provide comprehensive assessment of humoral alloimmunity.

