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The clinicopathological relevance of pretransplant anti-angiotensin II type 1 receptor antibodies in renal transplantation.

Lee J[1], Huh KH[1], Park Y[2], Park BG[3], Yang J[4], Jeong JC[4], Lee J[5], Park JB[6], Cho JH[7], Lee S[8], Ro H[9], Han SY[10], Kim MS[1], Kim YS[1], Kim SJ[6], Kim CD[7], Chung W[9], Park SB[10], Ahn C[11]; KNOW-KT on behalf of the Study Group.

Collaborators (20)

Ahn C, Yang J, Jeong JC, Kim YS, Kim MS, Huh KH, Lee J, Kim SJ, Park JB, Kim CD, Cho JH, Jung HY, Chung W, Ro H, Park SB, Han SY, Hwang E, Park W, Park BJ, Lee J.

Author information

- [1]Department of Surgery, Yonsei University College of Medicine, Seoul, Republic of Korea.
- [2]Department of Laboratory Medicine, Yonsei University College of Medicine, Seoul, Republic of Korea Department of Laboratory Medicine, NHIC Medical Center, Ilsan Hospital, Goyang, Republic of Korea.
- [3]Department of Laboratory Medicine, Yonsei University College of Medicine, Seoul, Republic of Korea.
- [4]Transplantation Center, Seoul National University Hospital, Seoul, Republic of Korea.
- [5]Medical Research Collaborating Center, Seoul National University Hospital, Seoul, Republic of Korea.
- [6]Department of Surgery, Sungkyunkwan University, Seoul Samsung Medical Center, Seoul, Republic of Korea.
- [7]Department of Internal Medicine, Kyungpook National University Hospital, Daegu, Republic of Korea.
- [8]Department of Internal Medicine, Chonbuk National University Hospital, Jeonju, Republic of Korea.
- [9]Department of Internal Medicine, Gachon University, Gil Hospital, Incheon, Republic of Korea.
- [10]Department of Internal Medicine, Keimyung University, Dongsan Medical Center, Daegu, Republic of Korea.
- [11]Transplantation Center, Seoul National University Hospital, Seoul, Republic of Korea Department of Internal Medicine, Seoul National University College of Medicine, Seoul, Republic of Korea.

Abstract

BACKGROUND:

Anti-angiotensin II type 1 receptor antibodies (AT1R-Abs) have been suggested as a risk factor for graft failure and acute rejection (AR). However, the prevalence and clinical significance of pretransplant AT1R-Abs have seldom been evaluated in Asia.

METHODS:

In this multicenter, observational cohort study, we tested the AT1R-Abs in pretransplant serum samples obtained from 166 kidney transplant recipients. Statistical analysis was used to set a threshold AT1R-Abs level at 9.05 U/mL.

RESULTS:

Pretransplant AT1R-Abs were detected in 98/166 (59.0%) of the analyzed recipients. No graft loss or patient death was reported during the study period. AT1R-Abs (+) patients had a significantly higher incidence of biopsy-proven AR than AT1R-Abs (-) patients (27.6 versus 10.3%, P = 0.007). Recipients with pretransplant AT1R-Abs had a 3.2-fold higher risk of AR within a year of transplantation (P = 0.006). Five study subjects developed microcirculation inflammation (score ≥2). Four of them were presensitized to AT1R-Abs. In particular, three patients had a high titer of anti-AT1R-Abs (>22.7 U/mL).

CONCLUSIONS:

Pretransplant AT1R-Abs is an independent risk factor for AR, especially acute cellular rejection, and is possibly associated with the risk of antibody-mediated injury. Pretransplant assessment of AT1R-Abs may be useful for stratifying immunologic risks.