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The role of TNFSF13 level and Galactose deficient IgA in recurrent IgA nephropathy after kidney transplantation

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Objectives : Immunoglobulin A nephropathy (IgAN) is the most common primary glomerulonephritis among Asian people and, despite variations in the clinical characteristics of this disease, many people experience end-stage renal disease and undergo kidney transplantation. IgAN has shown increased recurrence rates after kidney transplantation. An increasing amount of evidence, including that from genome-wide association studies, has shown that increases in the tumor necrosis factor superfamily 13 (TNFSF13) levels are associated with IgAN progression. Aberrant galactose-deficient IgA1 (Gd-IgA1) is associated with the recurrence of IgA deposits after kidney transplantation. Therefore, this study aimed to determine whether the pretransplant TNFSF13 or Gd-IgA1/IgA levels are associated with the recurrence of IgAN or acute rejection after kidney transplantation.

Methods : A total of 74 IgAN patients who underwent kidney transplantation at Seoul National University Hospital from January 2011 to October 2015 were included in this study. The pretransplant serum TNFSF13 levels were determined using an enzyme-linked immunosorbent assay (ELISA) and the total IgA and Gd-IgA1 levels were measured using a lectin-based ELISA in stored pretransplant serum samples.

Results : The pretransplant TNFSF13 levels correlated with the recurrence of IgAN after kidney transplantation in patients who had received living-related donor grafts. Elevated levels of Gd-IgA1, which were proportional to the total IgA levels, were associated with acute T-cell-mediated rejection in IgAN patients who had undergone transplantation.

Conclusions : The serum TNFSF13 level may play a role in the recurrence of IgA deposits in transplanted kidneys in IgAN patients who have received living-related donor grafts. Higher levels of Gd-IgA1 were independently associated with a greater risk of acute T-cell-mediated rejection in IgAN patients.

Keywords : Immunoglobulin A nephropathy, tumor necrosis factor superfamily 13, galactose-deficient IgA1, recurrence, acute T-cell-mediated rejection