

Acute Vascular Rejection (AVR)

A new biomarker for renal allograft rejection



Method of assessing the risk of vascular damage

BACKGROUND

There is a need for novel markers and methods to predict and diagnose acute vascular rejection (AVR) of renal allografts. AVR is strongly associated with reduced graft survival. Current biomarkers of vascular rejection (such as donor specific antibodies) do not detect all forms of AVR.

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INTELLECTUAL PROPERTY

US PROVISIONAL PATENT APPLICATION
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KEYWORDS

Biomarker, Transplantation, Graft Rejection, Prognostic, Diagnostic

TECHNOLOGY

An ELISA diagnostic test that detects the levels of anti-LG3 antibodies in serum samples.

RESULTS

A retrospective case-controlled study was performed in which 2 groups of patients were selected according to the post-transplant occurrence of the following conditions: acute vascular rejection (AVR), cellular rejection and normal function of the renal allograft. Circulating levels of anti-LG3 antibodies were measured before transplantation and at the time of rejection in the AVR and cellular rejection groups.

Serum levels of anti-LG3 antibodies were found to be significantly higher pre- and post-transplantation in the renal transplant patient group that developed AVR, and were associated with decreased long-term graft function. This novel type of antibody identifies, PRIOR TO TRANSPLANTATION, patients at increased risk of AVR and allograft dysfunction. This information will help to tailor immunosuppressive treatment and facilitate surveillance of vascular injury and remodeling in kidney transplant recipients.

DEVELOPMENT STATUS

A second clinical validation study is required on a larger cohort of patients. The development plan for the diagnostic kit is pending.

OPPORTUNITY

- A novel predictor and diagnostic marker of AVR and long-term allograft function;
- No need for a biopsy;
- Surveillance of immune-mediated vascular injury in kidney transplant recipients
 - The risk of the acute and severe forms of renal allograft vascular rejection can be better assessed;
- In Quebec, approx. 900 patients are waiting for kidney transplants and 4,000 patients receive long term follow-up care.

Potentially a good marker for other vascular diseases were vascular ischemia and remodeling occur.

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