Significance of low level DSA detected by solid phase assay in association with acute and chronic antibody mediated rejection

Authors: Toshihito Hirai, Yugo Sawada, Naoki Kohei, Taiji Nozaki, Kazuya Omoto, Hideki Ishida, Kazunari Tanabe
Department of Urology, Tokyo Women Medical University, Tokyo, Japan

Introduction

The introduction of solid phase assays (SPA) enables more sensitive detection of anti-donor specific HLA antibody (DSA). However, evidence on the relevance between the clinical outcome and low titer DSA which is detected by these sensitive assays is still conflicting. The aim of this study is to evaluate impact of low titer DSA on transplant outcome and to determine how it should be managed.

Patients

We retrospectively studied the preoperative serum of ABO-compatible living kidney transplantation recipients transplanted between 2001 and 2004 by SPA using a Luminex platform. DSA was detected only by SPA in 24 patients, although all of them showed negative CDC-XM and FCXM. After 2005, we implemented SPA routinely and any patient having a positive DSA was considered to be a desensitization candidate. We retrospectively compared DSA(+) patients and DSA(-) patients in each periods.

Results


Graft Survival

Incidence Rate of Biopsy Proven Rejection

After implementing desensitization (2005-2009)

Graft Survival

Incidence Rate of Biopsy Proven Rejection

We also examined the results of SPA during the postoperative follow up period. Depletion of pre-existing DSA was observed in the longer term follow up in the RIT+DFPP treated patients. Despite our intensive regimen, no severe infection or leukopenia was observed in the desensitized group.

Conclusions

Patients with low titer DSA showed a high frequency of acute and chronic AMR and poor graft survival when transplanted without any desensitization. After implementing RIT/DFPP induction, the occurrence of AMR was significantly reduced. So in conclusion, we believed that patients with low titer DSA should be desensitized before undergoing transplantation.

References:


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