Pediatr Nephrol. 2015 Aug;30(8):1371-4. doi: 10.1007/s00467-015-3123-5. Epub 2015 May 9.

Accelerated rejection, thrombosis, and graft failure with angiotensin II type 1 receptor antibodies.

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Abstract

BACKGROUND:

Angiotensin II type 1 receptor antibodies (AT1R-Abs) have been implicated in renal transplant rejection and failure; however, the mechanism of allograft damage, patterns of clinical presentation, and response to desensitization of AT1R-Abs have not been clearly established.

CASE DIAGNOSIS/TREATMENT:

We present the case of a 7-year-old boy with preformed AT1R-Abs who developed accelerated vascular and cellular rejection and renal allograft thrombosis despite desensitization and treatment with angiotensin receptor blockade. Although an association between AT1R-Abs and microvascular occlusion has been previously described, we are the first to describe an association between AT1R-Abs and renal artery thrombosis, leading to devastating early allograft failure.

CONCLUSIONS:

This case highlights the risk of allograft thrombosis associated with AT1R-Abs and illustrates that previous treatments utilized for AT1R-Abs may not always be effective. Further studies are needed to better characterize the mechanisms of AT1R-Ab pathogenesis and to establish safe levels of AT1R-Abs both pre- and post-transplantation. Given the outcome of this patient and the evidence of pro-coagulatory effects of AT1R-Abs, we suggest that the presence of AT1R-Ab may be a risk factor for thrombosis. The role of treatment with anti-coagulation and novel immunomodulatory agents such as tocilizumab and bortezomib require further investigation.