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CNI toxicity and severe ABMR in kidney transplantation

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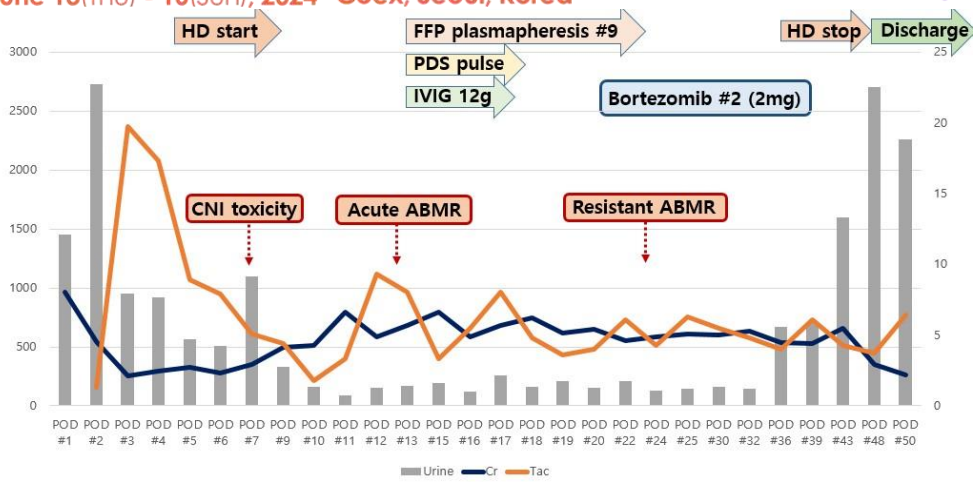
Objectives : This report describes a case of CNI toxicity and antibody-mediated rejection of a transplanted kidney. CNI toxicity was confirmed in the first kidney biopsy and acute antibody-mediated rejection (ABMR) persisted in subsequent biopsies. As there was no improvement despite the administration of steroids, FFP plasmapheresis, and intravenous immunoglobulin (IVIG), eculizumab was administered.
Methods : The patient was a 57-year-old female who had been diagnosed with ADPKD and CKD in 2006 and began hemodialysis treatment. Other underlying diseases were type 2 DM, HBV carrier, and brain aneurysm with a history of coil embolization. Four mismatches were confirmed in the donor HLA and recipient HLA tests, and the patient underwent deceased donor kidney transplantation in 2018, and basiliximab and steroids were administered as induction treatment. After kidney transplantation, tacrolimus, MMF, and steroids were administered as immunosuppressants.
Results : Acute ABMR was confirmed by 2nd biopsy at 13 days after transplant, and steroid pulse, FFP plasmapheresis, and IVIG were administered. Even though the DSA titer was lower than the prior test, AKI progressed with a daily urine output of 100 cc. A third kidney biopsy confirmed persistent acute ABMR. As treatment, steroid pulse, FFP plasmapheresis, and IVIG were administered, and bortezomib 2mg was administered twice. Pancytopenia developed due to bortezomib, but urine output began to increase 36 days after transplantation, and hemodialysis was discontinued. The patient subsequently showed improvement in AKI and pancytopenia and was discharged 50 days after transplantation.
Conclusions : It is important to identify the cause of AKI in transplant patients, and bortezomib can be used if ABMR persists. When bortezomib is administered, complications such as pancytopenia may occur, and CBC monitoring should be continued to check for other side effects such as infection.

Table 1.jpg

	Pre OP	HLA type (4 mismatch)	POD #11	POD #24	POD #36
Donor	negative	A2, A26, B61, B48, DR9, DR12			
Recipient		A26, A-, B62, B-, DR12, DR14	Class I : A2 positive (MFI 5751) B48 positive (MFI 4832) B61 positive (MFI 6141) Class II : DR9 positive (MFI 8917) DR53 expected to be positive (DR9-DR53 assumed to be related, MFI 4426) DQ9 expected to be positive (DR9-DQ9 assumed to be related, MFI 1317)	Class I : A2 weakly positive (A802:01, MFI 841; A02:03 negative, A02:06 negative) B48 negative B61 weakly positive (MFI 536) Class II : DR9 positive (MFI 1521) DR53 negative (DR9-DR53 assumed to be related negative DQ9 negative (DR9-DQ9 assumed to be related negative)	Class I : A2 negative B48 negative B61 negative Cw unable to determined (Cw no information) Class II : DR9 positive (MFI 665)

Table 1.jpg


HD start
FFP plasmapheresis #9
PDS pulse
IVIG 12g
Bortezomib #2 (2mg)
HD stop
Discharge
CNI toxicity
Acute ABMR
Resistant ABMR
3000
2500
2000
1500
1000
500
0
25
20
15
10
5
0
POD #1
POD #2
POD #3
POD #4
POD #5
POD #6
POD #7
POD #9
POD #10
POD #11
POD #12
POD #13
POD #15
POD #16
POD #17
POD #18
POD #19
POD #20
POD #22
POD #24
POD #25
POD #30
POD #32
POD #36
POD #39
POD #43
POD #48
POD #50
Urine
Cr
Tac