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A case of steroid withdrawal after ABO-incompatible kidney transplantation

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Case Study: Steroid-free protocol for ABO-compatible kidney transplantation has been attempted worldwide. However, it is still unclear whether this protocol is safe in ABO-incompatible (ABO-i) kidney transplantation (KT). Here, we report a case of steroid withdrawal after ABO-i KT.

A 46-year old man who had ABO-i kidney transplantation from 43-year old sister. His blood type is O, and his sister's is AB. ABO antibody titer was 1:16 of anti-A and 1:8 of anti-B in isoagglutinin test. The HLA mismatch was 0.

Single dose of rituximab (375 mg/m²) was administered 4 weeks before transplantation. Three times plasma exchange was done. Immunosuppression was initiated 7 days before transplantation: steroid 20mg, tacrolimus, and mycophenolate mofetil 1.5g bid daily.

Serum creatinine was 1.01-1.28mg/dL for 3 month. At 5 month, serum creatinine increased to 1.56mg/dL, and blood tacrolimus trough level was 10.2ng/mL. After reduction of tacrolimus dose, serum creatinine decreased to 1.40mg/dL. At 6 month, serum creatinine increased to 1.60mg/dL again in tacrolimus trough level of 4.8ng/mL. To confirm acute rejection, kidney biopsy was done. There was no evidence of acute rejection in kidney biopsy. Serum creatinine decreased to 1.29mg/dL without further specific management.

He wanted to stop steroid although he understood the risk of rejection after steroid withdrawal.

Steroid was stopped at 20 month after transplantation. At that time, serum creatinine was 1.13mg/dL, and anti-A and anti-B isoagglutinine titer was 1:16 and 1:2 respectively.

There have been no issues after steroid withdrawal. Serum creatinine is 1.21mg/dL, and his anti-A and anti-B titer is 1:32 and 1:2 at 47 month after transplantation. Currently, he has taken tacrolimus 0.75mg/bid and enteric coated mycophenolic acid 540mg/bid daily.

In conclusion, graft function has been stable for 23 months after steroid withdrawal in this case. In ABO-incompatible kidney transplantation, prednisolone withdrawal can be considered, but further studies are needed.