First Immunoadsorption (IA) for ABO-incompatible Kidney Transplant (ABOKTR) in South Africa: What nephrology clinical technologists and nurses learned from the immunoadsorption

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Abstract

Background: ABO blood groups mismatch between a kidney donor and a recipient should not be a barrier for a potential kidney transplant among chronic kidney disease (CKD) patients.

Methods: Final complement-dependent cytotoxic (CDC) crossmatch and anti-A or Anti-B antibodies were checked at screening and at 4 weeks before the kidney transplant, after which a final CDC crossmatch was done, and Rituximab was given. All patients were desensitized according to the protocol as published in SAMJ (Barday, 2024). The anti-A or anti-B antibodies were measured again 1 day before the ABOiKTR, on the day of immunoadsorption thereafter, daily for two weeks after the kidney transplant.

A nephrologist prescribed immunoadsorption for 3 CKD patients at Groote Schuur hospital who were scheduled to undergo ABOiKTR at different periods since January 2023. Each IA procedure was performed using a specific Glycosorb column and a *P2dry* plasma filter was used to separate the plasma from the whole blood before passing the plasma through a column at a rate not exceeding 50ml/min. Standard dialysis machines were used to perform IA with heparin.

Results: In case 1, the isohemagglutinins antibodies decreased from 1:8 to 1:4 after 6hours of IA and remained 1:4 the next morning pre-operation.

In case 2, the isohemagglutinins titres dropped from 1:16 after 6.5 hours of IA to 1:2 and remained 1:2 the next morning pre-operation.

In case 3, the isohemagglutinins titres dropped from 1:64 after 11 hours of IA to 1:8 and further decreased to 1:4 the next morning pre-operation.

All 3 patients only needed one session of IA pre-transplant. No patient required IA post-transplant. No episodes of rejection were diagnosed. No side effects related to IA column.

Conclusion: Immunoadsorption was safe and effective in reducing the isohemagglutinins titres. The costs for the procedure are comparable to therapeutic plasma exchange (TPE).