Desensitization Protocols for Crossing Human Leukocyte Antigen and ABO Incompatible Barriers

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Purpose of review : As the demand for organs continues to exceed the supply, the number of days spent waiting for a kidney transplant increases exponentially, particularly for patients who are broadly sensitized to allo-human leukocyte antigen molecules or have difficult to match blood types. In an effort to optimize organ availability and offer the benefit of renal transplantation to these patients, several transplant centers have developed protocols to overcome sensitization and blood group incompatibilities.

Recent findings : In addition to plasmapheresis and intravenous immunoglobulin, therapies like splenectomy and anti-CD20 were throught to be essential to the long-term engraftment of incompatible organs. The advent of more focused and powerful maintenance immunosuppression regimens that include agents with B-cell anti proliferative properties have produced excellent results without the need for long-term ablation of the B-cell compartment, reducing the risk of infectious and neoplastic complications.

Summary : The advent of high-dose intravenous immunoglobulin and plasmapheresis/low-dose intravenous immunoglobulin desensitization protocols have permitted renal transplantation across both ABO incompatible and positive donor- specific crossmatch barriers and allowed patients excluded from access to transplantation the opportunity to enjoy the many benefits of freedom from dialysis.

Key Words : ABO incompatible, Desensitization, Donor specific antibody, Positive crossmatch