

Image for representation purpose only.

However, **ABOi transplantation** is a viable option for **patients seeking kidney transplantation**<sup>1</sup>

Kidney transplantation in adults: ABO-incompatible transplantation

UpToDate March 2023 Review



# Outcomes ABOi transplantation<sup>1</sup>



Patient and  
graft survival

Associated with lower graft and patient survival within the first three years post-transplant as compared to ABO-compatible transplantation

However, longer term graft and patient survival rates appears to be comparable

## Infection prophylaxis and monitoring holds importance post transplantation<sup>1</sup>



In all ABOi recipients, antimicrobial and antiviral prophylaxis (Pneumocystis pneumonia and cytomegalovirus infection) is administered with a regimen similar to recipients of ABO-compatible transplant



Isoagglutinin titers are monitored daily while the patient is in the hospital and two times per week for the first month post-transplant



# Transplant options for ABO-incompatibility<sup>1</sup>



## ABOi transplantation

ABOi living donor transplantation requires a period of desensitization of the recipient prior to transplantation

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## Kidney paired donation

With a KPD program, willing participants can choose to exchange a donor to an alternate recipient with an ABO- or human leucocyte antigen-incompatible donor

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## Candidates with blood type B or O

Another option for candidates with blood type B or O is transplantation with a kidney from a blood type non-A1 (A2) donor





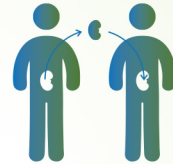
# Approach to ABOi transplantation<sup>1</sup>



## Patient eligibility

Must have an initial ABO isoagglutinin titer of  $\leq 1:256$  for both IgG and IgM

Willing to undergo ABOi transplantation and all therapies associated with it



## Pretransplant ABO desensitization

The purpose is to lower the anti-A/B antibody titers to a level that is not associated with immediate antibody injury to the allograft and allows successful transplantation

### Removal of circulating ABO-antibodies:

Two common methods are plasmapheresis and immunoadsorption

### Immunomodulation:

IVIg is administered prior to ABOi transplantation to replace immunoglobulins

### B cell depletion:

Rituximab is the humanized mouse monoclonal antibody that targets CD20 which is the most used agent





# Transplant immunosuppression

## Induction immunosuppression<sup>1,2</sup>

- The optimal induction immunosuppressive therapy for ABOi transplantation is not known
- Approach to induction immunosuppression in ABOi recipients is the same as that for patients undergoing ABO-compatible transplantation<sup>1</sup>
- Recipients of an ABO-incompatible donor kidney are considered to be at high immunologic risk for rejection and should be considered for **rATG-Thymoglobulin as part of their induction immunosuppressive therapy**
- In addition to induction therapy, additional measures such as plasmapheresis and immunoabsorption are generally required to decrease circulating ABO antibody titers and reduce the risk of acute antibody-mediated rejection (AMR)<sup>2</sup>

## Maintenance immunosuppression<sup>1</sup>

**A triple therapy maintenance immunosuppression is recommended which includes a calcineurin inhibitor (tacrolimus), an anti-metabolite (mycophenolate) and prednisone**