8.5: Transfusion and organ transplantation

8.5.1: Renal transplantation

It is important to avoid unnecessary blood transfusions in potential renal transplant recipients as exposure to multiple blood donations may cause alloimmunisation to human leucocyte antigen (HLA) class I antigens on white blood cells. HLA antibodies can react with the transplanted kidney leading to higher rates of acute rejection and poorer long-term graft survival. The risk of alloimmunisation has reduced since the introduction of universal leucodepletion of blood components and the use of ESA in CKD.

ABO-incompatible renal transplants have traditionally been avoided because of a high incidence of failure due to hyperacute graft rejection. To increase the pool of potential donors, pre-transplant protocols that combine plasma exchange with immunosuppressive therapy and immunoadsorption columns to remove ABO antibodies from the patient's blood are proving increasingly successful.

Irradiated cellular blood components are currently recommended for solid organ transplant patients who have received alemtuzumab (anti-CD52) as immunosuppressive therapy (see section 8.7).

8.5.2: Haemolysis after ABO-incompatible solid organ transplantation

Transplanted organs may contain donor B-lymphocytes capable of producing ABO antibodies. Transplantation of the liver from a blood group O donor to a patient of other ABO groups, especially group A, can cause immune haemolysis of the recipient's red cells 7 to 10 days post-transplant (‘passenger lymphocyte syndrome’). This is usually mild and resolves within 4 weeks but may require treatment with steroids or red cell transfusion (with group O blood). Passenger lymphocyte syndrome can complicate other solid organ transplants, depending on the lymphoid cell content of the transplanted organ. It is rare with renal transplants but much more common in heart–lung and small bowel transplants.