

Rhesus D antibody formation after kidney transplant

Introduction

Alloimmunization may occur in a Rhesus D (Rh D) negative recipient after exposure to Rh D positive red blood cells present in the graft at time of transplantation. Haemolytic complications of the fetus and newborn in future pregnancies of female transplant recipients may occur in sensitised individuals. There is discrepancy amongst current practice in the UK regarding administration of anti Rh D antibody after transplantation to Rh D negative recipients of a Rh D positive kidney. One study, published 20 years ago, reported 2/42 (5%) of Rh D negative recipients had Rh D antibody after transplantation but development of anti-Rh D antibodies following renal transplantation with current surgical techniques is undetermined. The aim of this study is to determine the Rh D antibody status of Rh D negative recipients with Rh D positive grafts in order to inform the use of anti-D prophylaxis.

Methods

All Rh D negative renal transplant recipients receiving Rh D positive grafts from two London teaching hospitals between February 2000 until August 2015 were identified from hospital records. Recipient demographic data, nature of donor and Rh D antibody status before and after transplant were recorded. None of the patients received anti-Rh D prophylaxis after transplantation.

Results

A total of 125 Rh D negative patients underwent transplant during the time of observation. Of those, 78 (63%) received Rh D positive grafts. Deceased donors accounted for 73% of transplants and 29 (37%) of recipients were female. None of the recipients developed anti Rh D antibodies after transplantation.

Conclusion

The development of anti Rh D antibodies did not occur in Rh D negative recipients of Rh D positive kidney transplants, thus anti-Rh D prophylaxis may not be necessary. The risk of haemolytic disease of the fetus and newborn in female transplant recipients is likely to be low. However, sensitisation to other red cell antigens (e.g. Kell) during transplantation may occur, and further assessment of other antibody development is needed.