

Early post-transplant blood transfusions are common and independently associated with allograft failure: results of a multicentre study

Dr Sevda Hassan, Ms Lisa Mumford, Dr Fiona Regan, Dr Susan Robinson, Dr Dora Foukaneli, Prof Mike Murphy, Dr Nick Torpey, Prof Rutger Ploeg, Prof Nizam Mamode, Dr Michelle Willicombe

¹National working group for HLA-Matched Red Cells in renal transplantation, London, United Kingdom

Introduction

The clinical impact of post-transplant blood transfusions has been inconsistently reported in the literature. Inter-centre variation in clinical practices and patient demographics may contribute to conflicting outcomes. In this study, performed as part of a NHSBT and BTS national working group, we aim to review the incidence of blood product transfusion and allograft outcomes across 4 centres.

Methods

Patients receiving a renal transplant between 2016–2017 at Cambridge, Guys, Imperial and Oxford were included. The blood service at each unit confirmed the transfusion status for each individual up to a year post transplant. The collated data was analysed against nationally collected outcomes by NHSBT statistics department.

Results

221/723 (30.6%) of transplant recipients were transfused, with comparable transfusion rates between the units.

189/723 (26.1%) of patients received blood products only, 25/723 (3.5%) received both blood and platelets, whilst only 7/23 (1%) received platelets alone. Transfusions commonly occurred within the first week post-transplant [median time of 4 days (IQR: 0-12)].

Transfused patients were older ($p < 0.01$), female (100/221 (45%), $p < 0.01$), non-Caucasian (96/221 (43%), $p < 0.01$) and waited longer for a transplant ($p = 0.001$). They were more likely to receive kidneys from older donors ($p < 0.01$) with a higher UKKDRI ($p < 0.01$) with a longer cold ischaemic time ($p < 0.01$).

Graft outcomes were inferior in the transfused group, who were more likely to have delayed graft function ($p < 0.01$) and a lower eGFR at 3 and 12-month time points ($p < 0.01$).

After risk adjusting for recognised factors associated with allograft loss, transfusion was found to be independently associated with graft failure; HR: 3.33 (1.65-6.71), $p = 0.0008$, which was further analysed by transfusion with blood-only (HR: 2.69 (1.26-5.72), $p = 0.01$), and blood and platelets together (HR: 11.13 (4.26 – 29.08), $p < 0.001$).

Conclusion

Transfusions are common in the acute post-transplant period and independently associated with inferior outcomes. Further studies are required to delineate the mechanisms associated with adverse outcomes.