Asian donor and black recipient kidney transplants more likely to fail sooner compared with white counterparts

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Black transplant recipients and patients who received kidneys from Asian donors had a significantly higher risk of kidney graft failure

within seven years, according to a new study presented at the European Society for Organ Transplantation (ESOT) Congress 2021.

The study of 20,304 kidney organs transplanted between January 2001 and December 2015 from the United Kingdom NHS Transplant Registry, found Asian donor and black recipient ethnicities were associated with inferior long-term outcomes, when compared with white counterparts.

Unadjusted survival analysis demonstrated significantly poorer long-term allograft (donor kidney) outcomes associated with Asian and black donors, compared to white donors. The 7-year graft survival was 71.9% from Asian donors, 74.0% from black donors and 80.5% from white donors.

When Cox Regression Analysis (a statistical technique) was used to account for other factors and give more insight into the true nature of the associations with outcomes, the hazard ratio was 1.37 for Asian donors (a 37% increased risk of the donor organ failing compared to white donors), and 1.21 for black recipients (a 21% increased risk of organ graft failure compared to white recipients).

Researchers found better Human Leukocyte Antigens (HLA) tissue matches when the donor and recipient pairs were the same ethnicity. At seven years, 81% of white donor/recipient pairs still had a successful graft compared to 70.6% of Asian and 69.2% of black pairs. Interestingly, further analysis revealed graft survival outcomes were worse for black recipients who received kidneys from black donors (a hazard ratio of 1.92, so a 92% increased risk of the donor organ failing compared to a white donor-white recipient pair). The other pairs with significantly worse outcomes were when an Asian donor kidney was transplanted into a white recipient and when a white donor kidney was transplanted into a black recipient with 56% and 22% increased risk of

the donor organ failing compared to a white donor-white recipient pair, respectively.

Lead study author Mr. Abdul Rahman Hakeem, a Consultant Hepatobiliary and Transplant Surgeon at St James's University Hospital NHS Trust, Leeds, United Kingdom, says the disparity revealed is due to a combination of factors which put ethnic minorities at a disadvantage when it comes to transplants.

"For a start, ethnic minority patients face significant disadvantage in access to the renal transplant waiting lists in the UK and may wait twice as long as white recipients for a deceased donor renal transplant, spending longer time on dialysis, so their health may have deteriorated more," says Mr Hakeem.

"The longer wait for a donor kidney is due to a shortage of grafts from ethnic minority patients—in our study, Asian people make up 12.4% of deceased donor recipients and black people 6.7% of recipients, yet Asian people account for 1.6% of all donors and black people 1.2% of donors."

Mr Hakeem adds "despite efforts to improve education about transplant and organ donation amongst ethnic minority groups, awareness and donation rates remain low, when compared to white people." In the UK, for example, organ allocation policy for donation after brain death (DBD) donors changed in 2006, with an emphasis on equity of access, in addition to HLA matching. This policy appears to have improved access to kidney transplantation among ethnic minorities; however, advantages have been limited by an increase in the number of patients on the transplant waiting list.

The authors said that whilst an increase in deceased organ donations from Asian and black communities is desirable to improve blood group and HLA matching for these recipients, the impact of using organs from

minority donors is still poorly reported, in part, because of the relative scarcity of such transplants. International experience with the use of non-white donors for non-white recipients, has suggested that long-term outcomes are consistently inferior to allografts obtained from white donors. They proposed that there are multiple factors that may contribute to inferior outcomes in these settings, in particular higher prevalence of hypertension, diabetes, coronary artery disease and renal disease in these populations.

"Increased deceased donation among ethnic minority communities would benefit the entire recipient pool by increasing the numbers of available organs and may specifically benefit the Asian and black recipients by increasing the numbers of blood group and HLA-compatible grafts for allocation", says Mr Hakeem.

Mr Hakeem continues: "In conclusion, expanding the organ donor pool by increasing donation rates among ethnic minority groups remains a worthy goal and will improve overall access to transplantation whilst also reducing time spent on a waiting list, in particular within ethnic minority communities."

"More research is needed to investigate why, despite advantages of blood-group compatibility and improved HLA matching, black recipients of black donor grafts appear to have the poorest outcomes", he said. "This difference cannot be explained by donor issues alone. There is need for future research to factor this into the UK kidney allocation system and get the best long-term results. An increase in deceased organ donation from ethnic minorities may improve access to transplantation for these groups but may not improve allograft outcomes."

More information: www.esotcongress.org/

Provided by The European Society for Organ Transplantation (ESOT)