

## Access to kidney transplantation in the UK Chinese population: a UK Renal Registry analysis

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### Background

Previous UK Renal Registry (UKRR) analyses have shown ethnic disparity in access to kidney transplants in the UK, but access to transplantation for the UK Chinese population has not been investigated

In this UKRR analysis, we compared the likelihood of kidney transplantation between the UK White and UK Chinese renal populations, aiming to investigate whether there was evidence of ethnic disparity in access to kidney transplantation for this specific ethnic group.

### Method:

Data on all adult patients  $\geq 18$  years who started kidney replacement therapy (KRT) between 1/1/97 and 31/12/16 were extracted from the UKRR. Patients with ethnicity recorded as anything other than “Chinese” or “White”, or with ethnicity data missing were excluded. Patients aged  $\geq 75$  years at start of KRT were excluded because of the high prevalence of comorbidity which decreases the likelihood of transplantation and the very small proportion of patients receiving a kidney transplant in the UK in this age group.

Socioeconomic status (SES) was measured using country-specific Index of Multiple Deprivation quintiles derived from patient postcodes (1=most deprived, 5=least deprived).

The independent variable of interest was Chinese ethnicity (Chinese vs White). Multivariable logistic regression models were used to investigate the relationship between Chinese ethnicity and being listed on the deceased-donor transplant waiting list i) at start of KRT ii) 2 years after start of KRT iii) pre-emptive kidney transplantation, iv) kidney transplantation at 3 years after start of KRT, and v) living-donor kidney transplantation. The models were run unadjusted and then adjusted for the confounders, specified a priori, age, sex, primary kidney disease and SES. Odds ratios (ORs) with 95% confidence intervals (CIs) were calculated using robust standard errors to account for clustering by kidney centre.

### Results:

The dataset comprised of 92,857 incident KRT patients. 0.5% (n=501) were of Chinese ethnicity, 76% (n=70,575) were White. The findings of the multivariable logistic regression analyses are presented in Table 1. Even after adjustment for potential confounders UK Chinese patients had lower odds of being waitlisted at the start of KRT (OR 0.71, [95% CI 0.54-0.94]) but were more likely to be waitlisted at 2 years (OR 1.28, [95% CI 1.02-1.61]) compared to White patients. UK Chinese individuals were also less likely to receive a pre-emptive kidney transplant (OR 0.47, [95% CI 0.29-0.78]), less likely to be transplanted within 3 years of starting KRT (OR 0.69, [95% CI 0.52-0.92]) or have a living-donor kidney transplant(LDKT) (OR 0.39, [95% CI 0.26-0.59]) compared to White patients.

### Conclusion:

This is the first study that has shown that UK Chinese kidney patients are less likely to receive a living or deceased-donor kidney transplant. Future research needs to test whether later presentation or more rapid progression of kidney disease could explain these observations. The higher odds of transplant listing at 2 years suggests fitness for transplantation is not a significant barrier. The reasons why this ethnic group are

less likely to receive a LDKT are not well understood. Understanding whether these disparities reflect modifiable policy, health system or donor/recipient level barriers will help ensure equitable access to transplantation.