

Clinical characteristics of the UK Chinese population with kidney failure: a UK Renal Registry analysis

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Background

Data from the UK Renal Registry (UKRR) have shown that 0.5% of those in the UK with kidney failure are of Chinese ethnicity. The UK Chinese population is growing. Ethnic differences in cause of kidney disease and dialysis rates have been described in UK White, South Asian, and Black individuals. However, the clinical demographics of the UK Chinese population with kidney disease have not been investigated.

The China Kidney Disease Network and Hong Kong Renal Registry have reported the main cause of chronic kidney disease in their populations is diabetes, but the causes of kidney disease in other Chinese diaspora have not been well described.

We investigated the clinical characteristics of the UK Chinese population on kidney replacement therapy (KRT) as compared with the UK White KRT population in this UKRR analysis.

Method:

Data on all adult patients ≥ 18 years who started 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.

Socioeconomic status was measured using country-specific Index of Multiple Deprivation (IMD) quintiles derived from patients’ postcodes (1= most deprived, 5= least deprived). The Chi-square (*) and Mann-Whitney U (**) tests were used to compare baseline characteristics between Chinese and White ethnic groups.

Results:

The dataset comprised of 92,857 incident KRT patients, of which 0.5% (n=501) were of Chinese ethnicity and 76% (n=70,575) were White. Clinical characteristics of the UK Chinese population as compared to the UK White population are presented in Table 1.

UK Chinese patients were younger at start of KRT than white patients (61.4 years vs 65.6 years, $p < 0.001^{**}$). Any difference in the proportion of male patients (60.7% vs 63.0%, $p = 0.29^*$) or socioeconomic status ($p = 0.75^*$) between the two groups was consistent with chance.

There were marked differences in the causes of kidney disease: UK Chinese patients had more diabetic kidney disease (29% versus 20%, $p < 0.001^*$) and glomerulonephritis than white patients (21% vs 13%, $p < 0.001^*$) There was modest evidence that more UK Chinese patients started KRT on peritoneal dialysis (PD) compared to the White population (26% vs 23%, $p = 0.01^*$)

Conclusion:

We found evidence that the UK Chinese KRT population differs from the UK White KRT population. To our knowledge, this is the first study describing kidney disease in the UK Chinese population, and one of the first to describe disease in the Chinese diaspora.

The causes behind our finding of a greater burden of diabetes and glomerulonephritis in the UK Chinese KRT population compared to the White population requires further investigation.

The increased rates of PD in UK Chinese patients may be associated with lower average Body Mass Index (BMI) in the Chinese population. The quantity of missing BMI data in the UKRR dataset prevented investigation of this association. Studies from Hong Kong have suggested that high transporter status is less common and lower dialysis volumes are required in their population. It would be beneficial to elucidate whether this is also the case in UK Chinese patients.