Fracture Incidence and Post Fracture Mortality in English and New York State Kidney Transplant Recipients: A Population Level Comparative Study.

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INTRODUCTION

We have previously shown that English kidney transplant recipients (KTRs) appear to have a lower incidence of fractures post transplantation compared to historical United States (US) kidney transplant recipients. We have also shown that English kidney transplant recipients have a high mortality rate post fracture. To date, no study has compared fracture incidence and mortality post fracture in contemporaneous English and US kidney transplant recipients.

METHODS

We used the Hospital Episode Statistics (HES) and Office of National Statistics (ONS) databases to obtain data on English KTRs and the Statewide Planning and Research Cooperative System (SPARCS) data reporting system to obtain data on New York State (NYS) KTRs.

RESULTS

Table 1. Baseline characteristics of English and NYS kidney transplant recipients.

		England (n=18,493)	New York State (n=11,602)	P value
Age (years)		47.61	50.88	<0.001
Women		7123 (38.52%)	4569 (39.38%)	0.136
Ethnicity	White	14508 (78.45%)	6202 (53.46%)	<0.001
	Black	1215 (6.57%)	2660 (22.93%)	
	Other	2770 (14.98%)	2740 (23.62%)	
Co-morbidities	Myocardial infarction	1148 (6.21%)	1375 (11.85%)	<0.001
	Cerebrovascular disease	803 (4.35%)	859 (7.40%)	<0.001
	Congestive heart failure	924 (5.00%)	2587 (22.30%)	<0.001
	Peripheral vascular disease	1020 (5.52%)	920 (7.93%)	<0.001
	Diabetes mellitus	2781 (15.04%)	4462 (38.46%)	<0.001
	Liver disease	86 (0.47%)	213 (1.84%)	<0.001
	Pulmonary disease	2170 (11.73%)	68 (0.59%)	<0.001
	Cancer	696 (3.76%)	452 (3.90%)	0.559
	Previous fracture	566 (3.06%)	286 (2.47%)	0.002

Table 2. Cox regression of variables associated with cumulative incidence of all fractures.

Variable		England Hazard Ratio (95% Confidence Intervals)	P value	New York State Hazard Ratio (95% Confidence Intervals)	P value
Age	18 to 49	1 (baseline group)	-	1 (baseline group)	-
	50 to 69	1.46(1.21-1.75)	<0.001	1.36(1.06-1.76)	0.016
	70 and over	2.51(1.71-3.70)	<0.001	2.07(1.43-3.00)	<0.001
Gender	Male	1 (baseline group)	-	1 (baseline group)	-
	Female	1.47 (1.23-1.75)	<0.001	1.27 (1.01-1.59)	0.038
Ethnicity	White	1 (baseline group)	-	1 (baseline group)	-
	Black	0.58 (0.37-0.91)	0.019	0.63 (0.47-0.85)	0.002
	Other	0.64 (0.48-0.85)	0.003	0.67 (0.50-0.91)	0.009
Pre-transplantation diabetes mellitus		2.16 (1.75-2.66)	<0.001	1.95 (1.54-2.46)	<0.001
Previous fractures		2.09 (1.41-3.08)	<0.001	1.97 (1.18-3.29)	0.009

REFERENCES:
Ferro CJ et al. *Clin Transplant.* 2015 Nov;29(11):1004-12. **Fracture risk and mortality post-kidney transplantation.**

We studied adult KTRs in England and NYS who received a kidney transplant from January 2003 to December 2013. Data was censored in December 2014, giving 90,655 patient-years of follow up for the English cohort and 67,743 patient-years of follow up for the NYS cohort.

All fracture risk

In total 637 (3.44%) English KTRs sustained any fracture and 398 (3.43%) NYS KTRs sustained any fracture during the follow-up period. The unadjusted event rate for any fracture was 7.0 per 1000 patient-years for the English cohort and 5.9 per 1000 patient-years for the NYS cohort (P=0.948). The commonest sites of fracture in both cohorts were femur, tibia/ fibula and foot/ ankle. Within 1 year of sustaining any fracture 65 (10.20%) English KTRs and 43 (10.94%) NYS KTRs had died (P=0.451).

Hip fracture risk

In total 147 (0.79%) English and 101 (0.87%) NYS KTRs sustained a hip fracture during the study period (P=0.480) giving a crude all fracture incidence rate of 1.62 per 1000 patient-years and 1.49 per 1000 patient-years respectively. Within 1 year of sustaining a hip fracture 22 (14.97%) English KTRs and 17 (16.83%) NYS KTRs had died (P=0.692).

CONCLUSIONS

Contemporaneous English and NYS kidney transplant recipients have very similar total fracture and hip fracture rates. One year mortality after any fracture, especially after hip fracture, remains very high in both cohorts.

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