ALL-CAUSE MORTALITY AND CARDIOVASCULAR DISEASE INCIDENCE IN PATIENTS WITH CHILDHOOD-ONSET END-STAGE RENAL DISEASE IN SCOTLAND

D. Galiyeva[1], C. Jackson[2], N. Halbesma[2], D. Hughes[3], S. Burns[3], W. Metcalfe[4], S. Wild[2]

[1]Nazarbayev University School of Medicine, Astana, Kazakhstan,
[2] Usher Institute of Population Health Sciences and Informatics, University of Edinburgh, Edinburgh, United Kingdom;
[3]Royal Hospital for Children, Glasgow, United Kingdom;
[4]Scottish Renal Registry, United Kingdom

Objectives: to describe the long-term survival and cardiovascular disease (CVD) incidence in patients initiating renal-replacement therapy (RRT) in childhood in Scotland.

Methods We included patients who started RRT at <18 years of age between 1961 and 2013 from the Scottish Renal Registry (SRR) to create our mortality cohort. Since hospital admission data is available in Scotland from 1981 we included patients who started RRT between 1981 and 2013 in our CVD incidence cohort. We identified incident CVD through linkage to mortality and hospital admission records.

Results Characteristics of the mortality cohort (N=479) and the CVD cohort (N=381) were similar. There were more males than females, the largest group of primary renal disease (PRD) was congenital anomalies of kidney and urinary tract (CAKUT) and the majority of patients initiated their treatment with dialysis. In the mortality cohort 126 patients died during a median of 18.3 years (interquartile range (IQR) 8.7-27.0). In the CVD cohort 134 patients developed CVD incidence during a median follow-up of 12.9 years (IQR 5.6-21.5). The overall crude mortality and CVD incidence rates were1.5 and 2.6 per 100 person-years, respectively.

Compared to patients with CAKUT, patients with an 'other' category of PRD had a higher risk of all-cause mortality. Receiving dialysis rather than a kidney transplantation during follow-up was associated with a higher risk of both all-cause mortality and CVD incidence. Younger age at initiation of RRT was associated with a higher risk of all-cause mortality, while the reverse was found with respect to CVD incidence (Table 1).

Table 1. Associations between PRD, type of RRT, age at start of RRT and sex and all-cause mortality or CVD incidence

	All-cause mortality (mortality cohort) Adjusted HR (95%CI)	**CVD incidence (CVD cohort) Adjusted HR (95%CI)**
PRD[a]		
Glomerulonephritis	0.97 (0.58-1.62)	0.95 (0.59-1.55)
Other	1.58 (1.05-2.39)	1.14 (0.75-1.71)
CAKUT	1.00	1.00
Type of RRT[b]		
Started on PD and did not receive a Tx over follow-up	15.25 (8.43-27.5)	3.32 (1.24-8.88)
Started on HD and did not receive a Tx over follow-up	14.66 (8.11-26.5)	2.14 (0.87-5.23)
Pre-emptively Tx	0.55 (0.20-1.52)	0.82 (0.45-1.51)
Tx after dialysis	1.00	1.00
Age at start of RRT[c]		
0-1	2.50 (1.19-5.25)	0.95 (0.44-2.05)
2-5	1.24 (0.58-2.67)	0.82 (0.44-1.52)
6-11	0.95 (0.59-1.52)	0.59 (0.36-0.96)
12-18	1.00	1.00
Sex[c]		
Male	1.37 (0.95-1.98)	1.32 (0.92-1.90)
Female	1.00	1.00

HR-hazard ratio, PRD-primary renal disease,CAKUT-congenital anomalies of kidney and urinary tract,Tx-transplanted, RRT-renal replacement therapy, PD-peritoneal dialysis, HD-haemodialysis, Adjusted for (a)age, sex, RRT at start and period of start of RRT, (b) age, sex, PRD and period of start of RRT, (C)PRD, type of RRT at start and period of start of RRT. CI-confidence interval, HR, hazard ratio, CVD-cardiovascular disease,

Conclusions. Type of RRT and age at start of RRT were significant determinants for both all-cause mortality and CVD incidence, while PRD was significantly associated only with all-cause mortality.