

Survival and Dialysis Initiation: Comparing British Columbia and Scotland Registries

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INTRODUCTION:

This study compares dialysis survival in two geographically similar areas, Scotland (SRR) and British Columbia Canada (BCR). The relationship of eGFR at dialysis start to survival was also measured.

METHODS:

Incident adult dialysis populations of Scotland (n=3372) and British Columbia (n=3927), 2000 to 2005 were compared. Hazard ratios for mortality were calculated using a Cox proportional hazards model.

Final Model

	Mortality Hazard Ratio	95% Confidence Limits
SRR vs. BCR	1.363	1.259 - 1.476
Age (per 5 years)	1.221	1.195 - 1.248
Population Mortality Rate	0.999	0.998 - 1.001
Male Sex	1.037	0.967 - 1.112
Primary Kidney Disease, Reference: GN/Autoimmune		
Diabetes	1.769	1.553 - 2.015
Polycystic/Drug Nephropathy/ Congenital	1.354	1.178 - 1.556
Renal Vascular	1.391	1.209 - 1.601
Unknown	1.648	1.448 - 1.875
Dialysis Initiation Year, Reference: 2000		
2001	1.025	0.919 - 1.142
2002	1.023	0.915 - 1.144
2003	0.922	0.820 - 1.037
2004	0.915	0.807 - 1.039
2005	0.807	0.698 - 0.933
PD vs HD	0.754	0.686 - 0.828
GFR at Dialysis Initiation, Reference: GFR < 5 ml/min		
GFR Not Recorded	1.345	1.142 - 1.584
GFR 5-10ml/min	1.170	1.024 - 1.338
GFR 10-15ml/min	1.371	1.185 - 1.587
GFR >15ml/min	1.648	1.391 - 1.951
Hb at Dialysis Initiation, Reference: Hg ≥ 11 g/dL		
Hb Not Recorded	1.196	1.059 - 1.350
Hb <10.0g/dl	1.311	1.186 - 1.448
Hb 10.0-10.9g/dl	1.083	0.956 - 1.225

RESULTS:

Median survival times were 38 and 44 months in SRR and BC giving an unadjusted mortality hazard ratio, SRR vs. BC, of 1.20 (95% CI: 1.12-1.29). BC patients started dialysis at a higher eGFR (8.9ml/min) than Scotland (7.5ml/min) and higher starting eGFR was associated with higher mortality unadjusted hazard ratio (1ml/min increase, HR=1.028; 95% CI: 1.021-1.035). The BC cohort was older and had more diabetic renal disease. In our final model, lower starting eGFR was associated with better survival and SRR had greater mortality than BC. General population mortality and transplantation rates were considered and had only minor influence.

CONCLUSIONS:

Survival in BC was higher than in Scotland. Increased mortality was associated with higher eGFR at the initiation of dialysis. Thus the concepts of 'late' vs. 'early' start dialysis based on eGFR alone may need to be modified given the complexity and confounding by reasons for dialysis initiation. Disparity in mortality between the registries is difficult to explain and may reflect some of their unrecorded differences that influence survival on dialysis.

