

## THE IMPACT OF DIALYSIS EXPOSURE ON TRANSPLANT OUTCOMES DIFFERS IN CANADA AND THE UNITED STATES

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**BACKGROUND:** The impact of pre-transplant dialysis exposure on kidney transplant outcomes may vary in different health care models. Since dialysis survival is greater in Canada compared to the United States, we compared the impact of dialysis duration on patient and graft survival in these countries.

**METHODS:** We studied all adult recipients of deceased donor kidney transplant in Canada and the United States between 1995-2005, using data from the Canadian Organ Replacement Register and the United States Renal Data System. Canadian transplant recipients were matched 1:4 on diabetes, race and dialysis duration, to transplant recipients in the United States. Multivariate Cox regression models were used to examine the differential association of dialysis exposure with transplant outcomes in these countries.

		Duration of Dialysis Prior to Transplantation					
		0-6 m	6m-1y	1-2y	2-3y	3-4y	>4 y
Canada	All cause graft loss	1.00	1.26 (1.00, 1.59)	1.17 (0.95, 1.42)	1.36 (1.11, 1.66)	1.27 (1.03, 1.57)	1.57 (1.28, 1.91)
	Death censored graft loss	1.00	1.16 (0.87, 1.55)	1.11 (0.87, 1.42)	1.17 (0.91, 1.50)	1.13 (0.87, 1.36)	1.26 (0.98, 1.62)
	Death with functioning graft	1.00	1.49 (1.01, 2.21)	1.27 (0.90, 1.80)	1.71 (1.22, 2.40)	1.53 (1.07, 2.18)	2.13 (1.52, 2.98)
United States	All cause graft loss	1.00	1.17 (1.04, 1.32)	1.31 (1.18, 1.44)	1.35 (1.22, 1.49)	1.39 (1.25, 1.54)	1.56 (1.41, 1.72)
	Death censored graft loss	1.00	1.37 (1.17, 1.61)	1.40 (1.22, 1.61)	1.37 (1.19, 1.58)	1.37 (1.18, 1.59)	1.48 (1.28, 1.70)
	Death with functioning graft	1.00	0.97 (0.82, 1.16)	1.20 (1.04, 1.38)	1.31 (1.13, 1.50)	1.38 (1.19, 1.59)	1.62 (1.41, 1.86)

**RESULTS:** Compared to patients with dialysis exposure < 1 year, increasing duration of dialysis was associated with graft loss from all causes in the US, but was only important in Canada when dialysis duration was > 4 years. This difference was explained by no impact of dialysis duration on death censored graft loss in Canada, whereas dialysis was associated with death with a functioning graft in both systems.

**CONCLUSIONS:** We conclude that dialysis duration < 4 years is not associated with graft loss in Canada. The mechanisms explaining the differential impact of dialysis in the two countries on death censored graft loss require further investigations and may be related to modifiable differences in dialysis care.