

Supplementary Material

Supplementary Table 1. The overall hazard ratios for mortality over the 58 month study period* and the 6, 12, and 24-month mortality rates in the various vascular access groups.

Access group (N)	Hazard ratio (over 58 mo. study) (95% CI)	P	6 month mortality (%)	12 month mortality (%)	24 month mortality (%)
AVF (9,794)	0.50 (0.48-0.52)	<0.0001	9	17	31
AVF-CVC (8,230)	0.66 (0.64-0.68)	<0.0001	15	25	42
AVF-CVC subgroups (AVF placement time prior to initiation)					
<4 mo (6,668)	0.67 (0.65-0.70)	<0.001			
>2 mo (4,561)	0.66 (0.63-0.68)	<0.001			
>4 mo (3,126)	0.65 (0.61-0.68)	<0.001	14	24	41
>6 mo (2,316)	0.64 (0.60-0.68)	<0.001			
>9 mo (1,569)	0.65 (0.61-0.70)	<0.001			
CVC (90,517)	1.0		32	46	62

*Calculated with the CVC group as reference, the Cox proportional hazards models were adjusted for the following covariates: age at hemodialysis initiation, sex, race, comorbidity index, body mass index, cause of ESRD, and duration of pre-ESRD nephrology care.

**AVF access group consists of those patients with an AVF placed first and initiating hemodialysis with the AVF; AVF-CVC access group had an AVF placed first but initiated hemodialysis with a catheter and the AVF-CVC subgroups having the AVF placed less than 4 months or greater than 2, 4, 6, or 9 months before initiating HD with a catheter ; CVC access group had a catheter placed first and initiated hemodialysis with the catheter.

Supplementary Table 2. Proportional hazard analysis* of mortality for vascular access subgroups based on age, sex, race and comorbidities with the CVC group** as reference.

	AVF access group** Hazard ratio (95% CI)	P	AVF-CVC access group** Hazard ratio (95% CI)	P
Age categories				
67-79	0.49 (0.47-0.51)	<0.001	0.66 (0.63-0.69)	<0.001
80-89	0.51 (0.49-0.54)	<0.001	0.67 (0.63-0.70)	<0.001
>90	0.57 (0.45-0.71)	<0.001	0.59 (0.47-0.75)	<0.001
Sex				
Males	0.49 (0.47-0.52)	<0.001	0.66 (0.63-0.69)	<0.001
Females	0.51 (0.48-0.54)	<0.001	0.66 (0.63-0.70)	<0.001
Race				
Whites	0.50 (0.48-0.52)	<0.001	0.67 (0.64-0.69)	<0.001
Blacks	0.49 (0.44-0.54)	<0.001	0.63 (0.58-0.68)	<0.001
Comorbidity index (0-15)				
≤ 7	0.48 (0.46-0.50)	<0.001	0.66 (0.63-0.70)	<0.001
8 to 10	0.50 (0.48-0.53)	<0.001	0.65 (0.62-0.68)	<0.001
≥ 11	0.64 (0.53-0.76)	<0.001	0.73 (0.62-0.85)	<0.001
Diabetes***				
Yes	0.50 (0.48-0.53)	<0.001	0.67 (0.64-0.70)	<0.001
No	0.51 (0.48-0.53)	<0.001	0.65 (0.62-0.69)	<0.001
Diabetic end-organ disease***				
Yes	0.51 (0.49-0.54)	<0.001	0.66 (0.63-0.69)	<0.001
No	0.50 (0.48-0.52)	<0.001	0.67 (0.64-0.70)	<0.001
Cerebrovascular disease***				
Yes	0.53 (0.48-0.58)	<0.001	0.71 (0.65-0.77)	<0.001
No	0.50 (0.48-0.52)	<0.001	0.66 (0.63-0.68)	<0.001
Coronary artery disease***				
Yes	0.52 (0.49-0.55)	<0.001	0.67 (0.64-0.71)	<0.001
No	0.49 (0.47-0.52)	<0.001	0.66 (0.63-0.68)	<0.001
Congestive heart failure***				
Yes	0.53 (0.50-0.56)	<0.001	0.67 (0.63-0.70)	<0.001
No	0.50 (0.48-0.53)	<0.001	0.67 (0.64-0.70)	<0.001
Hypertension***				
Yes	0.50 (0.49-0.52)	<0.001	0.66 (0.64-0.69)	<0.001
No	0.49 (0.44-0.53)	<0.001	0.66 (0.60-0.72)	<0.001

Malignancy***				
Yes	0.49 (0.44-0.54)	<0.001	0.62 (0.56-0.68)	<0.001
No	0.51 (0.49-0.53)	<0.001	0.67 (0.65-0.69)	<0.001
Peripheral vascular disease***				
Yes	0.53 (0.50-0.58)	<0.001	0.71 (0.66-0.76)	<0.001
No	0.50 (0.48-0.52)	<0.001	0.65 (0.62-0.67)	<0.001
COPD***				
Yes	0.56 (0.51-0.61)	<0.001	0.71 (0.65-0.77)	<0.001
No	0.50 (0.48-0.52)	<0.001	0.66 (0.63-0.68)	<0.001
Duration of pre-ESRD nephrology care				
No care (n=35,948)	0.48 (0.39-0.58)	<0.001	0.66 (0.60-0.73)	<0.001
0-6 months (n=11,447)	0.49 (0.45-0.53)	<0.001	0.64 (0.58-0.69)	<0.001
6-12 months (n=23,525)	0.49 (0.46-0.52)	<0.001	0.65 (0.62-0.69)	<0.001
>12 months (n=23,111)	0.51 (0.48-0.54)	<0.001	0.68 (0.65-0.72)	<0.001
Missing data (n=14,960)	0.40 (0.34-0.48)	<0.001	0.58 (0.52-0.65)	<0.001

*The results shown were derived from 40 separate Cox proportion hazard models, each of them adjusted for the following covariates: age at ESRD onset, race, sex, body mass index, primary cause of ESRD, duration of pre-ESRD nephrology care, and comorbidity index.

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***In subgroup analyses by comorbidities, the corresponding comorbidity was removed from the comorbidity index calculation to avoid potential co-linearity, e.g., in subgroup analysis of diabetes, diabetes was not included in the comorbidity index calculation.