

## **SUPPLEMENTARY APPENDIX**

### **Supplementary Figure Legend**

**Supplementary Figure 1. Distribution of baseline total testosterone levels.**

**Supplementary Figure 2. Association between baseline total testosterone gradations and all-cause mortality in dialysis patients.** Figures present hazard ratios (short-dashed lines indicate 95% CIs) for total testosterone analyzed as a spline with knots at the 33<sup>rd</sup> and 66<sup>th</sup> percentiles of observed values (total testosterone levels 227 and 361ng/dl, respectively). A histogram of observed baseline testosterone values and a hazard reference ratio of 1 (long-dashed line) is overlaid. Testosterone levels exceeding the 97.5<sup>th</sup> percentile of observed values were excluded for the purposes of the spline analyses. Case-mix adjusted analyses adjusted for calendar quarter of study entry, age, sex, race/ethnicity, and diabetes; Expanded case-mix models adjusted for case-mix model covariates, as well as dialysis vintage, cause of end-stage renal disease, modality, dialysis access, congestive heart failure, coronary heart disease, and serum albumin level.

**Supplementary Table 1. Distribution of total testosterone levels across age strata.**

Age (years)	N	Mean $\pm$ SD	Median (IQR)
		Total Testosterone (ng/dl)	Total Testosterone (ng/dl)
< 40	66	371 $\pm$ 222	336 (224, 480)
40-60	289	353 $\pm$ 179	338 (232, 458)
> 60	269	280 $\pm$ 192	247 (158, 359)

**Supplementary Table 2. Association between testosterone quartile and all-cause mortality.**

Quartile	Minimally adjusted		Case-mix adjusted		Expanded case-mix + laboratory adjusted	
	HR (95%CI)	p*	HR (95%CI)	p**	HR (95%CI)	p***
<b>1</b>	2.63 (1.57-4.41)	<0.001	2.17 (1.28-3.69)	<0.001	2.32 (1.33-4.06)	0.003
<b>2</b>	1.72 (0.99-2.99)	0.06	1.59 (0.91-2.79)	0.11	1.80 (0.99-3.28)	0.05
<b>3</b>	1 (ref)	N/A	1 (ref)	N/A	1 (ref)	N/A
<b>4</b>	0.54 (0.26-1.12)	0.10	0.61 (0.29-1.26)	0.18	0.68 (0.32-1.42)	0.30

*\*Minimally adjusted analyses p-for-trend: <0.001. \*\*Case-mix analyses p-for-trend: <0.001. \*\*\*Expanded case-mix+laboratory analyses p-for-trend: 0.001. Minimally adjusted analyses adjusted for calendar quarter of study entry; Case-mix adjusted analyses adjusted for minimally adjusted model covariates, as well as age, sex, race/ethnicity, and diabetes; Expanded case-mix models adjusted for case-mix model covariates, as well as dialysis vintage, cause of end-stage renal disease, modality, dialysis access, congestive heart failure, coronary heart disease, and serum albumin level.*

**Supplementary Table 3. Associations between baseline total testosterone level (dichotomized as total testosterone level <300ng/dl vs. ≥300ng/dl; reference: total testosterone ≥300ng/dl) and all-cause mortality.**

	Minimally adjusted		Case-mix adjusted		Expanded case-mix + laboratory adjusted	
Subgroups	HR (95% CI)	p-interaction	HR (95% CI)	p-interaction	HR (95% CI)	p-interaction
<b>Age</b>						
<55 years old	2.57 (1.18, 5.63)	0.72	2.96 (1.36, 6.40)	0.78	4.90 (1.81, 13.2)	0.74
≥55 years old	2.81 (1.63, 4.84)		2.37 (1.36, 4.12)		2.42 (1.31, 4.50)	
<b>Race</b>						
Black	8.44 (2.97, 24.0)	0.03	7.72 (2.66, 22.5)	0.03	9.87 (2.84, 34.3)	0.07
Non-Black	1.86 (1.14, 3.04)		1.63 (1.00, 2.66)		1.65 (0.96, 2.84)	
<b>Diabetes</b>						
Presence	2.94 (1.75, 4.95)	0.77	2.40 (1.42, 4.08)	0.86	2.64 (1.50, 4.65)	0.77
Absence	3.19 (1.44, 7.06)		2.42 (1.07, 5.47)		2.35 (0.92, 5.97)	
<b>CHF</b>						
Presence	4.99 (2.37, 10.5)	0.07	4.13 (1.94, 8.82)	0.08	3.94 (1.74, 8.93)	0.15
Absence	2.13 (1.20, 3.78)		1.67 (0.91, 3.04)		1.88 (0.97, 3.63)	
<b>CHD</b>						
Presence	5.10 (1.85, 14.1)	0.28	4.81 (1.68, 13.8)	0.13	28.3 (5.27, 152)	0.04
Absence	2.52 (1.55, 4.09)		1.81 (1.10, 3.00)		1.73 (1.01, 2.97)	
<b>Modality</b>						
Hemodialysis	3.77 (2.27, 6.26)	0.04	3.07 (1.83, 5.15)	0.15	3.02 (1.74, 5.24)	0.11
Peritoneal dialysis	1.02 (0.37, 2.78)		0.82 (0.27, 2.46)		2.35 (0.54, 10.3)	
<b>Serum albumin</b>						
<4.0 g/dl	3.04 (1.86, 4.97)	0.37	2.75 (1.67, 4.54)	0.15	2.89 (1.72, 4.86)	0.07
≥4.0 g/dl	3.23 (1.23, 8.47)		1.74 (0.62, 4.90)		1.63 (0.44, 6.09)	
<b>Vintage</b>						
<1 year	3.93 (2.09, 7.38)	0.56	2.59 (1.35, 4.94)	0.69	2.69 (1.36, 5.32)	0.49
≥1 year	2.31 (1.26, 4.26)		2.16 (1.17, 4.00)		2.42 (1.23, 4.76)	
<b>Body mass index</b>						
<25 kg/m <sup>2</sup>	3.88 (1.86, 8.09)	0.20	3.76 (1.80, 7.84)	0.26	4.75 (1.92, 11.76)	0.46
≥25 kg/m <sup>2</sup>	4.40 (1.99, 9.74)		3.71 (1.64, 8.40)		3.35 (1.39, 8.08)	

*Minimally adjusted analyses adjusted for calendar quarter of study entry; Case-mix adjusted analyses adjusted for minimally adjusted model covariates, as well as age, sex, race/ethnicity, and diabetes; Expanded case-mix models adjusted for case-mix model covariates, as well as dialysis vintage, cause of end-stage renal disease, modality, dialysis access, congestive heart failure, coronary heart disease, and serum albumin level.*