

Supplemental Material

1. Table of contents

- a. **Supplemental Table 1:** Characteristics of patients with incident kidney failure (2005-2017) by sex
- b. **Supplemental Table 2:** Characteristics of all waitlisted patients by sex and attributed cause of kidney failure
- c. **Supplemental Table 3:** Hazard of deceased donor transplantation from waitlisting by sex
- d. **Supplemental Table 4:** Access to waitlist and deceased donor transplantation by sex after first kidney replacement therapy with competing risk of death and living donor kidney transplantation
- e. **Supplemental Table 5:** Access to deceased donor transplantation after waitlisting by sex with competing risk of death and living donor kidney transplantation
- f. **Supplemental Table 6:** Hazard of waitlisting and deceased donor transplantation after first kidney replacement therapy by sex, age, and attributed cause of kidney failure
- g. **Supplemental Table 7:** Hazard of waitlisting and deceased donor transplantation by sex after first maintenance kidney replacement therapy excluding those placed on waitlist before first maintenance kidney replacement therapy

Supplemental Table 1: Characteristics of patients with incident kidney failure (2005-2017) by sex

	Total cohort (N=1,478,037)	
	Men (N=843,132)	Women (N=634,905)
Median Age in years (IQR) [†]	64 (53-74)	65 (54-75)
Race % [†]		
Non-Hispanic White	55	51
Non-Hispanic Black	24	30
Hispanic	15	14
Other	5	6
Attributed Cause of kidney failure % [†]		
Type 2 diabetes	41	43
Type 1 diabetes	4	4
Hypertension	29	27
Cystic disease	2	2
Glomerulonephritis	8	8
Other	16	15
Median income ¹ , \$1000s (IQR) [†]	47.7 (37.8-62.2)	46.2 (36.7-59.4)
Insurance ² , % [†]		
Medicare	59	61
Medicaid	11	14
None	7	5
Other	23	19
BMI ³ (IQR) [†]	27.4 (23.7-32.2)	28.5 (23.7-34.9)
Diabetes ⁴ , % [†]	59	62
COPD ⁴ , % [†]	9	9
Smoker ⁴ , % [†]	7	5
Cancer ⁴ , % [†]	8	6
Number of cardiovascular comorbidities ⁴ . mean ± SD [†]	0.71 ± 0.93	0.68 ± 0.90

BMI, Body Mass Index; IQR, interquartile range; SD standard deviation

¹ 37,848 missing income

² 11,240 missing insurance coverage

³ 11,332 missing BMI

⁴ 28,599 missing one or more comorbidity data point

[†] p<0.001 for differences between men versus women

*Cardiovascular comorbidities included Coronary Artery Disease, Congestive Heart Failure, Stroke or Transient Ischemic Attack, and Peripheral Vascular Disease

Supplemental Table 2: Characteristics of all waitlisted patients by sex and attributed cause of kidney failure

		All waitlisted Patients	Type 2 Diabetes	Type 1 Diabetes	Hypertension	GN	Cystic disease	Other
Total (N)	Men	167,519	58,241	11,266	40,756	27,392	10,769	19,095
	Women	103,592	29,711	7,802	21,708	21,842	9,302	13,227
Median age at waitlisting (IQR) ¹	Men	54 (44-62)	58 (50-64)	45 (37-54)	54 (43-63)	47 (35-58)	51 (45-59)	53 (37-63)
	Women	53 (42-61)	58 (50-64)	42 (34-52)	56 (45-64)	44 (33-56)	53 (46-60)	52 (39-62)
Race/ethnicity [†] , % ²								
Non-Hispanic White	Men	49	40	63	37	57	77	65
	Women	45	34	60	34	43	74	64
Non-Hispanic Black	Men	26	24	19	42	20	9	17
	Women	29	33	23	45	28	12	16
Hispanic	Men	18	26	15	15	15	10	13
	Women	17	24	13	14	18	10	13
Other	Men	7	10	3	6	9	4	6
	Women	8	9	4	8	11	4	7
Median Income, \$1,000s (IQR) ³	Men	51.0 (39.9-67.4)	50.0 (39.0-65.9)	50.4 (40.2-65.3)	48.9 (37.8-65.0)	53.2 (41.9-69.5)	55.7 (43.9-72.8)	53.2 (42.0-70.1)
	Women	49.6 (38.8-65.0)	47.2 (37.0-61.1)	50.1 (39.8-65.0)	47.4 (36.8-61.9)	51.3 (40.2-67.5)	54.4 (43.0-71.6)	52.3 (41.6-68.5)
Insurance Coverage [†] , % ⁴								
Medicare	Men	30	37	27	30	21	21	31
	Women	30	37	27	32	20	23	31
Medicaid	Men	12	12	14	12	10	6	12
	Women	15	16	19	16	17	8	14
Other	Men	49	44	50	44	60	67	48
	Women	47	39	48	41	56	65	48
None	Men	10	8	8	14	9	5	9
	Women	8	8	6	11	7	4	7
Median BMI ^{†4}	Men	28.2 (24.6-32.6)	26.9 (23.7-31.0)	26.9 (23.7-31.0)	28.1 (24.6-32.4)	27.7 (24.2-32.2)	27.4 (24.4-31.2)	26.2 (23.0-30.4)
	Women	28.0 (23.6-33.2)	26.4 (22.9-31.4)	26.4 (23.0-31.4)	28.0 (23.7-33.1)	26.6 (22.4-32.0)	26.7 (23.0-31.9)	26.2 (22.0-31.1)
Diabetes [†] , % ⁵	Men	51	100	100	21	11	8	16
	Women	45	100	100	21	9	7	13
Mean number of cardiovascular comorbidities ^{†*} (SD) ⁴	Men	0.33 ± 0.66	0.51 (0.79)	0.37 (0.70)	0.28 (0.58)	0.16 (0.44)	0.12 (0.39)	0.22 (0.55)
	Women	0.25 ± 0.58	0.46 (0.74)	0.32 (0.64)	0.22 (0.51)	0.12 (0.39)	0.07 (0.30)	0.15 (0.46)
COPD [†] , % ⁶	Men	2	3	2	2	2	1	2
	Women	2	3	1	2	1	1	2
Smoking [†] , % ⁴	Men	4	3	5	5	5	4	5
	Women	3	3	4	4	3	3	4
Cancer [†] , % ⁷	Men	3	2	1	3	3	2	7
	Women	3	2	1	2	2	3	6
Mean PRA %, (SD) ⁴	Men	6.5 (17.3)	6.3 (17.0)	5.9 (16.1)	7.0 (17.7)	6.0 (16.5)	5.7 (15.6)	7.5 (19.4)
	Women	25.0 (35.5)	26.5 (36.4)	20.2 (32.9)	27.9 (36.8)	24.2 (34.8)	22.7 (33.9)	22.2 (34.1)

GN, glomerulonephritis; BMI, Body Mass Index; PRA, panel reactive antibody; IQR, interquartile range; SD standard deviation

¹ p<0.05 for men vs women among all waitlisted patients and for all causes of kidney failure except type 2 diabetes (p=0.4) and other (p=0.6)

² p<0.05 for men vs women among all waitlisted patients and for all causes of kidney failure except other (p=0.09)

³ p<0.05 for men vs women among all waitlisted patients and for all causes of kidney failure except type 1 diabetes (p=0.2)

⁴ p<0.05 for men vs women among all waitlisted patients and for all causes of kidney failure

⁵ p<0.05 for men vs women among all waitlisted patients and for all non-diabetic causes of kidney failure

⁶ p<0.05 for men vs women among all waitlisted patients and for GN, p=0.2 for type 2 diabetes, p=0.08 for type 1 diabetes, p=0.1 for hypertension, p=0.2 for cystic, p=0.9 for other

⁷ p<0.05 for men vs women for all causes of kidney failure except type 2 diabetes (p=0.6), type 1 diabetes (0.6), and cystic (p=0.4)

† Ascertained at time of first KRT

*Cardiovascular comorbidities defined as Coronary Artery Disease, Congestive Heart Failure, Stroke or Transient Ischemic Attack, and Peripheral Vascular Disease

Supplemental Table 3: Hazard of deceased donor transplantation from waitlisting by sex*

	Access to deceased donor transplantation from time of waitlisting
Outcomes occurring for men, N (% of outcomes occurring in men)	38,668 (63)
Outcomes occurring for women, N (% of outcomes occurring in women)	22,839 (37)
Overall models	Women (vs Men) Hazard ratio (95% CI)
Unadjusted model	0.97 (0.95-0.99)
Minimally adjusted model [†] (Model 1)	0.96 (0.95-0.98)
Fully adjusted model [‡] (Model 2)	0.96 (0.94-0.98)

*Excludes preemptively waitlisted individuals due to lack of comorbid data at waitlisting.

[†]Adjusted for attributed cause of kidney failure, age at waitlisting, race/ethnicity, BMI, and panel reactive antibodies (PRA)

[‡]Adjusted for attributed cause of kidney failure, age at waitlisting, race/ethnicity, BMI, year of waitlisting, median zip code household income, insurance coverage, Organ Procurement and Transplant Network region, smoking, chronic obstructive pulmonary disease, cancer, coronary artery disease, congestive heart failure, stroke or transient ischemic attack, peripheral vascular disease, and PRA

Supplemental Table 4: Access to waitlist and deceased donor transplantation by sex after first kidney replacement therapy with competing risk of death and living donor kidney transplantation

Overall Models	Women (vs Men) Subhazard ratio (95% CI)		
	Access to waitlist from time of first kidney failure treatment accounting for the competing risk of death	Access to deceased donor transplantation from time of first kidney failure accounting for the competing risk of death	Access to deceased donor transplantation from time of first kidney failure accounting for the competing risk of living donor transplantation
Unadjusted model	0.80 (0.78-0.82) ²	0.83 (0.79-0.86) ²	0.87 (0.82-0.93) ¹
Minimally adjusted model (Model 1) [†]	0.86 (0.84-0.88) ²	0.90 (0.86-0.94) ²	0.90 (0.85-0.96) ¹
Fully adjusted model (Model 2) [*]	0.89 (0.87-0.91) ²	0.92 (0.88-0.96) ²	0.93 (0.89-0.97) ¹
Fully adjusted model (Model 2) stratified by cause of kidney failure			
Type 2 Diabetes	0.75 (0.73-0.78) ³	0.71 (0.67-0.76) ²	0.75 (0.66-0.85) ¹
Type 1 Diabetes	0.95 (0.89-1.01) ³	0.94 (0.85-1.04) ²	0.85 (0.70-1.04) ¹
Hypertension	0.89 (0.85-0.92) ³	0.91 (0.86-0.98) ²	0.89 (0.78-1.02) ¹
Cystic Disease	1.06 (1.01-1.12) ³	1.06 (0.95-1.18) ²	1.11 (0.96-1.29) ²
Glomerulonephritis	0.92 (0.88-0.95) ³	1.01 (0.95-1.09) ²	1.08 (0.94-1.24) ¹
Other	1.12 (1.07-1.18) ³	1.29 (1.19-1.41) ²	1.10 (0.92-1.32) ¹

¹ 5% data sample

² 10% data sample

³ 20% data sample

[†]Adjusted for attributed cause of kidney failure, age, race/ethnicity, body mass index, and, for waitlisted patients

^{*}Adjusted for attributed cause of kidney failure, age, race/ethnicity, body mass index, year of first kidney failure treatment, median zip code household income, insurance coverage, Organ Procurement and Transplantation Network, smoking, chronic obstructive pulmonary disease, cancer, coronary artery disease, congestive heart failure, stroke or transient ischemic attack, peripheral vascular disease

Supplemental Table 5: Access to deceased donor transplantation after waitlisting by sex with competing risk of death and living donor kidney transplantation*

Overall Models	Women (vs Men) Subhazard ratio (95% CI)	
	Access to deceased donor transplantation from time of waitlisting accounting for the competing risk of death	Access to deceased donor transplantation from time of waitlisting accounting for the competing risk of living donor transplantation
Unadjusted model	0.92 (0.87-0.97) ¹	0.96 (0.93-0.99) ¹
Minimally adjusted model (Model 1) [†]	0.89 (0.84-0.94) ¹	0.88 (0.83-0.93) ¹
Fully adjusted model (Model 2) [‡]	0.90 (0.85-0.95) ¹	0.89 (0.84-0.94) ¹
Fully adjusted model (Model 2) stratified by cause of kidney failure		
Type 2 Diabetes	0.84 (0.78-0.90) ²	0.83 (0.77-0.89) ²
Type 1 Diabetes	0.92 (0.80-1.07) ²	0.88 (0.76-1.02) ²
Hypertension	1.04 (0.96-1.12) ²	1.01 (0.93-1.10) ²
Cystic Disease	1.04 (0.86-1.25) ²	1.03 (0.85-1.23) ²
Glomerulonephritis	0.98 (0.90-1.08) ²	0.98 (0.89-1.07) ²
Other	0.93 (0.82-1.04) ²	0.92 (0.81-1.03) ²

*Excludes preemptively waitlisted individuals due to lack of comorbid data at waitlisting.

¹ 10% data sample

² 20% data sample

[†]Adjusted for attributed cause of kidney failure, age at waitlisting, race/ethnicity, body mass index, and panel reactive antibodies (PRA)

[‡]Adjusted for attributed cause of kidney failure, age at waitlisting, race/ethnicity, body mass index, year of waitlisting, median zip code household income, insurance coverage, Organ Procurement and Transplantation Network, smoking, chronic obstructive pulmonary disease, cancer, coronary artery disease, congestive heart failure, stroke or transient ischemic attack, peripheral vascular disease, and PRA

Supplemental Table 6: Hazard of waitlisting and deceased donor transplantation after first kidney replacement therapy by sex, age, and attributed cause of kidney failure

Overall models	Women (vs Men) Hazard ratio (95% CI)	
	Access to waitlist from time of first kidney failure treatment	Access to deceased donor transplantation from time of first kidney failure treatment
Fully adjusted model* (Model 2)		
Age <65 years	0.94 (0.93-0.95)	0.98 (0.96-0.99)
Age ≥65 years	0.68 (0.67-0.69)	0.75 (0.72-0.77)
Fully adjusted model (Model 2) stratified by cause of kidney failure and age		
Type 2 Diabetes		
Age <65 years	0.77 (0.76-0.78)	0.76 (0.74-0.79)
Age ≥65 years	0.55 (0.53-0.57)	0.54 (0.50-0.58)
Type 1 Diabetes		
Age <65 years	1.01 (0.98-1.04)	1.00 (0.95-1.04)
Age ≥65 years	0.63 (0.55-0.72)	0.75 (0.57-0.98)
Hypertension		
Age < 65 years	0.95 (0.93-0.97)	0.98 (0.95-1.01)
Age ≥ 65 years	0.70 (0.67-0.72)	0.75 (0.70-0.80)
Cystic disease		
Age < 65 years	1.06 (1.03-1.10)	1.19 (1.13-1.25)
Age ≥ 65 years	1.05 (0.97-1.13)	1.16 (1.02-1.32)
Glomerulonephritis		
Age < 65 years	0.99 (0.97-1.01)	1.02 (0.99-1.05)
Age ≥ 65 years	0.72 (0.68-0.77)	0.84 (0.76-0.93)
Other		
Age < 65 years	1.18 (1.15-1.21)	1.19 (1.16-1.23)
Age ≥ 65 years	0.90 (0.86-0.95)	0.96 (0.89-1.03)

*Adjusted for attributed cause of kidney failure, race/ethnicity, BMI, year of first kidney failure treatment, median zip code household income, insurance coverage, Organ Procurement and Transplant Network region, smoking, chronic obstructive pulmonary disease, cancer, coronary artery disease, congestive heart failure, stroke or transient ischemic attack, peripheral vascular disease

Supplemental Table 7: Hazard of waitlisting and deceased donor transplantation by sex after first maintenance kidney replacement therapy excluding those placed on waitlist before first maintenance kidney replacement therapy

	Women (vs Men) Hazard ratio (95% CI)	
Overall models	Access to waitlist from time of first kidney failure treatment	Access to deceased donor transplantation from time of first kidney failure treatment
Unadjusted Model	0.74 (0.74-0.75)	0.76 (0.75-0.77)
Minimally adjusted model [†] (Model 1)	0.81 (0.80-0.82)	0.84 (0.83-0.85)
Fully adjusted model [*] (Model 2)	0.83 (0.82-0.84)	0.86 (0.84-0.87)
Fully adjusted model (Model 2) stratified by cause of kidney failure		
Type 2 Diabetes	0.71 (0.70-0.72)	0.70 (0.67-0.72)
Type 1 Diabetes	0.88 (0.85-0.91)	0.86 (0.81-0.91)
Hypertension	0.85 (0.84-0.87)	0.89 (0.86-0.92)
Cystic disease	0.96 (0.91-1.00)	1.02 (0.95-1.10)
Glomerulonephritis	0.92 (0.90-0.94)	0.94 (0.91-0.98)
Other	1.03 (1.00-1.06)	1.09 (1.03-1.14)

[†]Adjusted for attributed cause of kidney failure, age, race/ethnicity, and BMI

^{*}Adjusted for attributed cause of kidney failure, age, race/ethnicity, BMI, year of first kidney failure treatment, median zip code household income, insurance coverage, Organ Procurement and Transplant Network region, smoking, chronic obstructive pulmonary disease, cancer, coronary artery disease, congestive heart failure, stroke or transient ischemic attack, and peripheral vascular disease