

## **Supplemental Material Table of Contents**

Supplemental Table 1. Histologic scoring for each biopsy parameter.

Supplemental Table 2. Characteristics of kidneys with concordant versus discordant histology on sequential biopsies.

Supplemental Figure 1. Correlation between first and second biopsy glomerulosclerosis. Dashed line is a reference line for concordance.

Supplemental Figure 2. Unadjusted Kaplan-Meier curves of death-censored allograft survival for kidneys with optimal second biopsy histology based on first procurement biopsy histology.

Supplemental Figure 3. Unadjusted Kaplan-Meier curves of overall allograft survival based on first procurement biopsy histology (panel A) and second procurement biopsy histology (panel B).

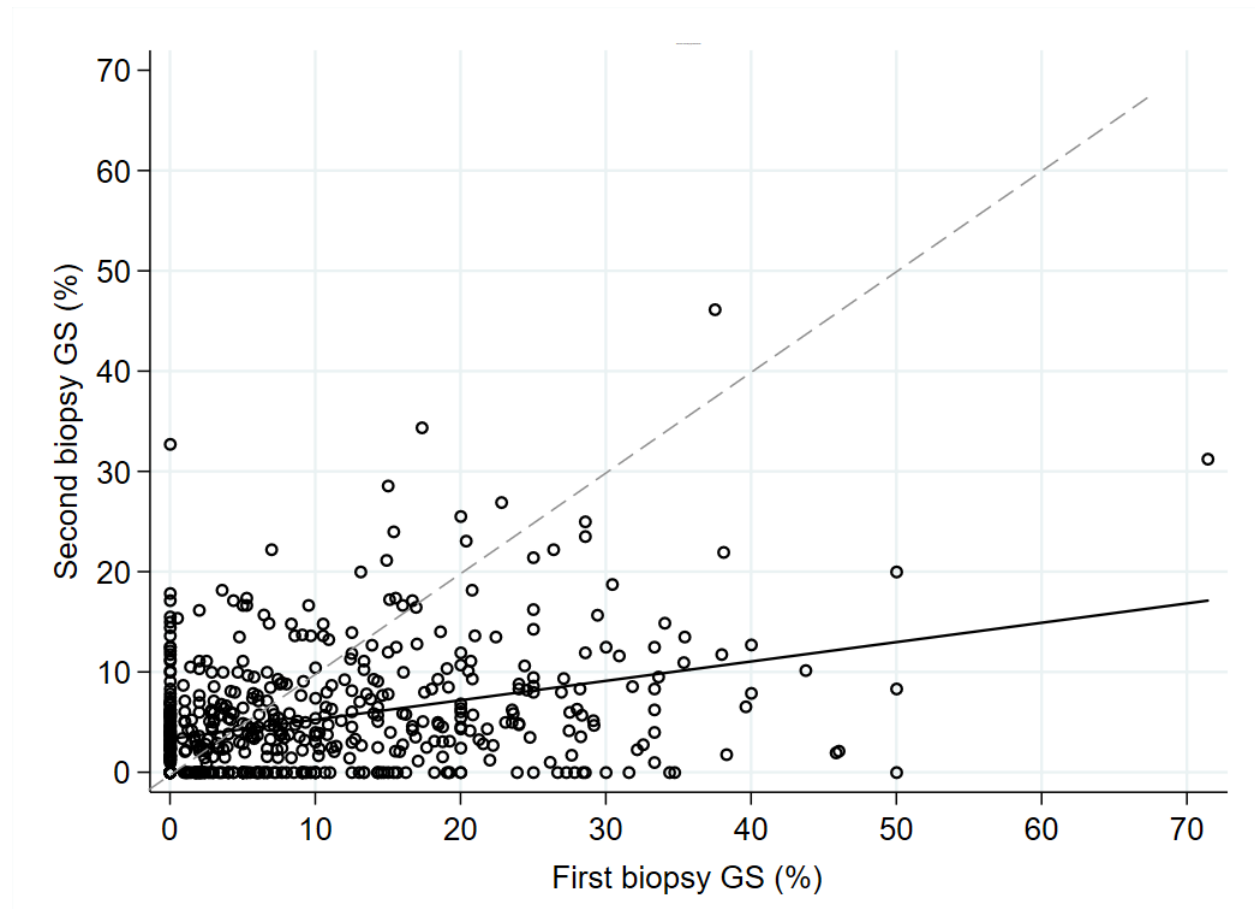
**Supplemental Table 1.** Histological classification and score

<b>Assigned Score</b>	<b>Glomerulosclerosis</b>	<b>Interstitial Fibrosis and Tubular Atrophy</b>	<b>Vascular Disease</b>
<b>0</b>	<5%	None (0-10%)	None (0-10%)
<b>1</b>	5 – 10%	Mild (11-25%)	Mild (11-25%)
<b>2</b>	11 – 25%	Moderate (26-50%)	Moderate (26-50%)
<b>3</b>	>25%	Severe (>50%)	Severe (>50%)
<b>Optimal</b>	Score of 0 or 1 for all biopsy compartments		
<b>Suboptimal</b>	Score of 2 or 3 for at least 1 biopsy compartment		

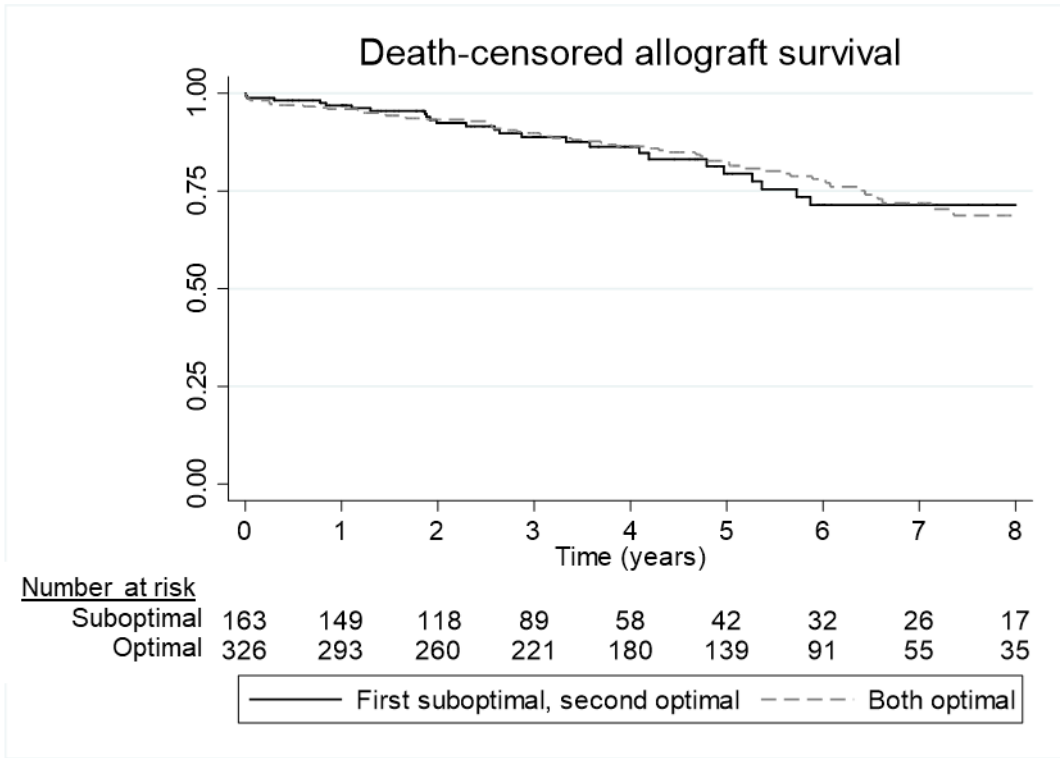
**Supplemental Table 2.** Characteristics of kidneys with concordant versus discordant histology on sequential biopsies.

Mean $\pm$ standard deviation or Column %	Discordant n=214 (35%)	Concordant n=392 (65%)	p
<i>First biopsy Characteristics</i>			
Optimal on first biopsy	51 (24)	332 (85)	<0.001
Optimal on second biopsy	163 (76)	332 (85)	0.01
Number of glomeruli	46 $\pm$ 30	50 $\pm$ 34	0.18
Glomerulosclerosis $\geq 10\%$	142 (66)	57 (15)	<0.001
IFTA moderate or severe (n=577)	10/203 (5)	4/347 (1)	0.007
VD moderate or severe (n=549)	44/197 (22)	21/352 (6)	<0.001
Compartment concordance	38 (18)	206 (53)	<0.001
Bilateral concordance	135 (63)	334 (85)	<0.001
Wedge biopsy (n=280)	150/178 (84)	75/102 (74)	0.03
<i>Donor characteristics</i>			
Age (years)	50 $\pm$ 8	45 $\pm$ 12	<0.001
Female	99 (46)	163 (42)	0.27
Black/African American	42 (20)	76 (19)	0.92
History of diabetes	46 (21)	67 (17)	0.18
History of hypertension	127 (59)	191 (49)	0.01
Final creatinine (mg/dL)	1.59 $\pm$ 1.02	2.26 $\pm$ 1.58	<0.001
Kidney donor risk index	1.27 $\pm$ 0.27	1.19 $\pm$ 0.29	0.001

Supplemental Figure 1. Correlation between first and second biopsy glomerulosclerosis. Dashed line is a reference line for concordance.

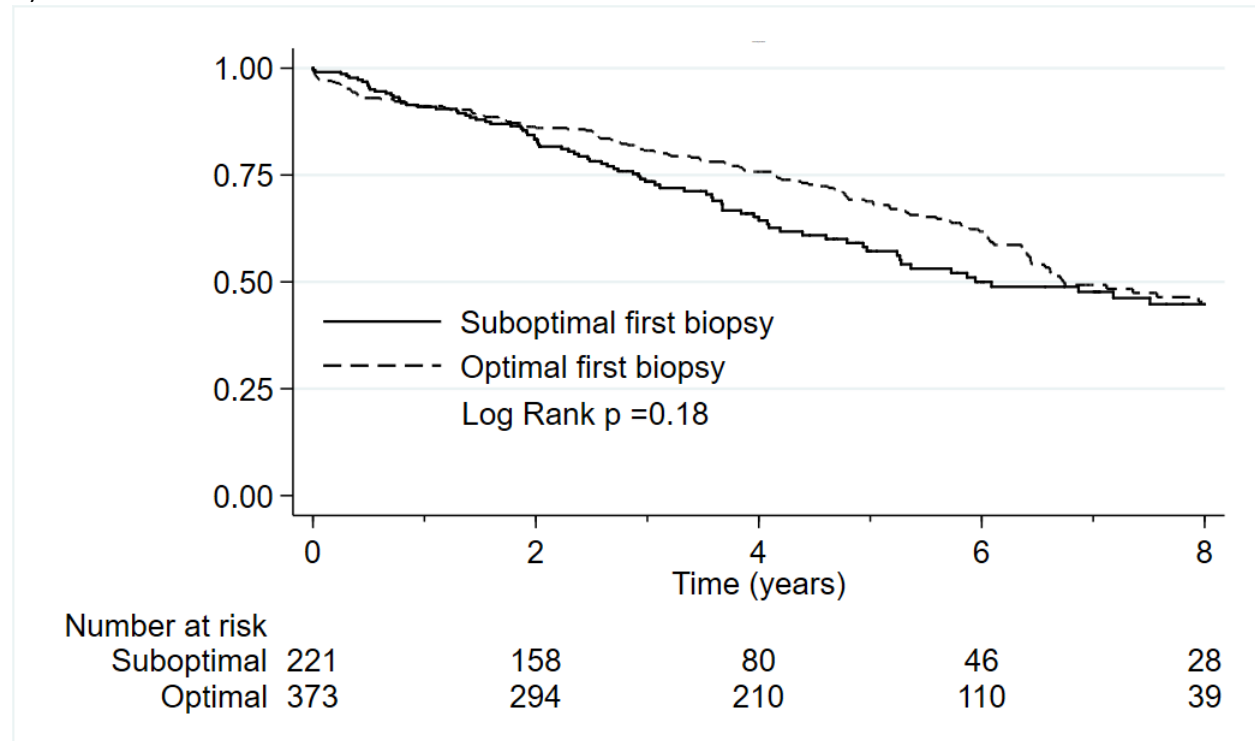


Supplemental Figure 2. Unadjusted Kaplan-Meier curves of death-censored allograft survival for kidneys with optimal second biopsy histology based on first procurement biopsy histology.



**Supplemental Figure 3.** Unadjusted Kaplan-Meier curves of overall allograft survival based on first procurement biopsy histology (panel A) and second procurement biopsy histology (panel B).

A)



B)

