Supplemental Digital Content

Table S1. Distribution of Banff severity scores at 6 months posttransplant. Numbers reflect percentages of 6-month surveillance biopsies with scores of 0, 1, 2, or 3 for each Banff lesion according to SCI status. SCI, subclinical inflammation; NMA, no major surveillance abnormalities.

Banff Injury Lesion (% with score of 0, 1, 2, 3)	All SCI (n=441) (n=137)		NMA (n=304)	P-value	
tubulitis (t)	72%, 17%, 7%, 4%	10%, 56%, 23%, 11%	100%, 0%, 0%, 0%	< 0.0001	
interstitial inflammation (i)	89%, 8%, 2%, 1%	63%, 27%, 8%, 2%	100%, 0%, 0%, 0%	< 0.0001	
intimal arteritis (v)	98%, 1%, 1%, 0%	95%, 4%, 1%, 0%	100%, 0%, 0%, 0%	< 0.0001	
total inflammation (ti)	37%, 57%, 4%, 2%	6%, 79%, 10%, 5%	51%, 48%, 1%, 0%	< 0.0001	
inflammation in scarred areas (i+IFTA)	46%, 53%, 1%, 0%	37%, 60%, 3%, 0%	51%, 48%, 1%, 0%	0.01	
glomerulitis (g)	92%, 6%, 2%, 0%	83%, 10%, 7%, 0%	96%, 4%, 0%, 0%	< 0.0001	
peritubular capillaritis (ptc)	95%, 3%, 2%, 0%	85%, 9%, 6%, 0%	99%, 1%, 0%, 0%	< 0.0001	
interstitial fibrosis (ci)	71%, 27%, 2%, 0%	59%, 34%, 6%, 1%	76%, 23%, 1%, 0%	0.0002	
tubular atrophy (ct)	32%, 65%, 3%, 0%	24%, 69%, 6%, 1%	36%, 63%, 1%, 0%	0.001	
chronic vasculopathy (cv)	61%, 27%, 10%, 2%	53%, 29%, 16%, 2%	63%, 27%, 8%, 2%	0.05	
transplant glomerulopathy (cg)	97%, 3%, 0%, 0%	96%, 4%, 0%, 0%	97%, 3%, 0%, 0%	0.44	
mesangial matrix increase (mm)	93%, 6%, 1%, 0%	90%, 8%, 1%, 1%	94%, 6%, 0%, 0%	0.30	
arteriolar hyalinosis (ah)	81%, 14%, 4%, 1%	77%, 18%, 5%, 0%	83%, 12%, 4%, 1%	0.21	
C4d staining of peritubular capillaries (C4d)	95%, 3%, 2%, 0%	93%, 4%, 2%, 1%	96%, 3%, 1%, 0%	0.48	

Table S2. Outcomes According to Treatment of Surveillance Phenotypes. Comparison of outcomes after the 6-month surveillance biopsy according to whether surveillance findings were treated with increased immunosuppression or observed expectantly. The *P*-values represent comparisons between the treated and observed subgroups within each subclinical inflammation phenotype by Mann-Whitney-U test (continuous variables) or chi-square/Fisher's exact test (categorical variables). Continuous variables are presented as mean ± standard error. SCI, subclinical inflammation; SC-B-TCMR, subclinical borderline T cell-mediated rejection; SC-TCMR, subclinical T cell-mediated rejection; SC-MVI, subclinical microvascular injury.

		All SCI (n=137)			
Outcome	Treated Observed (n=60) (n=77)		<i>P-</i> value	Observed (n=65)	
Triple Composite Endpoint (no, %)	10 (17%)	7 (9%)	0.18	7 (11%)	0.43
Acute rejection after surveillance (no., %)	6 (10%)	5 (7%)	0.45	5 (8%)	1.00
TCMR (no. %)	1 (2%)	2 (3%)	0.04	3 (5%)	0.82
ABMR/Mixed(no., %)	5 (8%)	3 (4%)	0.61	3 (5%)	0.82
Death-censored graft failure (no, %)	5 (8%)	4 (5%)	0.39	4 (6%)	0.70
Death (no, %)	2 (3%)	0 (0%)	0.19	0 (0%)	0.13
Estimated GFR (mL/min/1.73 m2), 12 months	53 ± 2.5 (n=50)	54 ± 2.2 (n=69)	0.91	55 ± 2.4 (n=60)	0.68
Estimated GFR (mL/min/1.73 m²), 24 months	57 ± 2.8 (n=35)	54 ± 3.5 (n=35)	0.28	55 ± 3.8 (n=39)	0.19
Estimated GFR decline > 30%, 6-24 months	2/32 (6%)	2/39 (5%)	1.00	2/34 (6%)	1.00

		SC-B-TCMR (n=102)		SCSC-TICOMPR((17=1105))		SCSCOWAR (n=26)					
Treated (n=60)	Outcome Observed (n=77)	Treated (n=37)	Colserveld (##765)	P-value	Tfeeatedd (n/¤379)	ODAsseveeld (n(≠655))	<i>P-</i> value	Tifeeateld (n/p=103)	Oblissevedd (n(#57)	<i>P</i> -value	Treated (n=13)
10 (1/17β/e) Compos	ite Endipeliki) (no, %)	6 (16%)	7 (9%)	001483	6 (01(60%))	7 (01(10%))	0. M3 A	04(08%%)	00(00%)	ND/225	4 (31%)
6 (10%) Acute re	ejecticon (ante) surveillance (no., %)	3 (8%)	55(78%)	01460	30(80%)	5Q &9 %)	1. l\00 A	O3((22%) %)	00(00%)	N0/52	3 (23%)
1 (2%)	CMR 2 n(6%))	1 (3%)	23(\$5%)	mears	1Q(3(0 %))	30(50%)	0.1920	00(00%)	00(00%)	MV.52	0 (0%)
5 (8%) A	ABMR 3M(isk%d) (no., %)	2 (5%)	33(45%)	00002	20(5(08%)	30(5(0%))	U.IQIZA	OB((02%) %)	OQ(@0 8%)	110751∠	3 (23%)
5 (8%) Death-o	ensor ed (50%)ft failure (no, %)	3 (8%)	44(56%)	003790	30(8(08%))	40(60%)	A 0177. 0	02(0195%)	OQ(@0 8%)	N0/8 9	2 (15%)
2 (3%) Death (no, %) 0 (0%)	2 (5%)	00(00%)	00193	20(5(08%)	00(00%)	0. N .8A	00(068)	OQ(@0 8%)	NWA	0 (0%)
53 ± 215s(tim-50e)d GFF	R 5,44h ±/20x20/(1h ₹691)n2), 12 months	54 ± 3.2 (n=32)	5815±±2224(n(n=690))	00968	545@ 3.42.@n(#0428))	5511 2.31.3n(+691))	00686	5502±4698((n=81)0)	461±3932(n(n4 5)	00469	52 ± 6.8 (n=
57 ± 2 EBs(tim=266)d GFF	R 5,44n ⊞/05xi55/(1h,₹3.51)n²), 24 months	60 ± 3.3 (n=23)	5 8 5±3358((n=35 9)	00289	6(53: 3:3.(n(#2:6))	5536£ £.8.((n(+342))	00197	5 52±3 967(n(n6 6))	3 64± 1506(n(n2 2)	00064	52 ± 9.7 (n
2/32E(still/in)ated GFF	R de2/109e (5%0)%, 6-24 months	1/20 (5%)	22394(56%)	110 0 0	1/126 (20%)	2/3/42 ((65%))	1:1000	1/6/(72(00%))	0023(00%)	1.1010A	0/7 (0%
	(n=60) 10 (ftrij%e) Compos 6 (10%) Acute re 1 (2%) T 5 (8%) A 5 (8%) Death-c 2 (3%) Death (6 53 ± 2Estim=50)d GFF 57 ± 219stim=30)d GFF	Treated (n=60)	Treated (n=60) Observed (n=77) Treated (n=37) 10 (ħ/ʔ/ʃ%) Composite Enð/þθ/ħ/þ (no, %) 6 (16%) 6 (10%) Acute rejectich (ʔ/ħ/þ) surveillance (no., %) 3 (8%) 1 (2%) TCMR2/r(8/%)) 1 (3%) 5 (8%) ABMR3/l/k/kd/(no., %) 2 (5%) 5 (8%) Death-censor/ed(\$//k/f failure (no, %) 3 (8%) 2 (3%) Death (no, %) (0%) 2 (5%) 53 ± 2/Est/m8/b/d GFR \$/ht//2/b//h/₹69/h2), 12 months 54 ± 3.2 (n=32) 57 ± 2/Est/m8/b/d GFR \$/ht//s/b//h/₹35/h²), 24 months 60 ± 3.3 (n=23)	Treated (n=60) Observed (n=77) Treated (n=37) Observed (n=78) 10 (ħ/ʔ/ʃs/e) Composite En/ð/gθ/h/g (no, %) 6 (16%) 7 (ʧ/ʔ/ʃs/e) 6 (10%) Acute rejectich (ʔ/fs/e) 3 (8%) 55(ʔ/fs/e) 1 (2%) TCMR2/(3/9h) 1 (3%) 22(≴9%) 5 (8%) ABMR3M(#&d(no., %) 2 (5%) 33(45%) 5 (8%) Death-censored(ʧ/ʃk/ff failure (no, %) 3 (8%) 44(ʧ/f8%) 2 (3%) Death (no, %) (0%) 2 (5%) 00(♥0%) 53 ± 2/Est/m8/t/g/d GFR (ʃk/h/f/f/f/f/f/f/f/f/f/f/f), 24 months 54 ± 3.2 (n=32) 585±±2224((m=69)) 57 ± 2/Bs/m3/t/g/d GFR (ʃk/h/f/f/f/f/f/f/f/f/f/f/f/f/f/f/f/f/f/f/	Treated	Treated	Treated (n=60) Observed (n=77) Treated (n=37) P-value Treated (n=379) Observed (n=379) Observ	Treated (n=60)	Treated (n=60) Observed (n=77) Observed (n=37) Observed (n=37) P-value (n=37) Observed (n	Treated (n=60) Coutcome Observed (n=77) Coutcome (n=37) Coutcome (n=37) P-value	Treated (n=60) Observed (n=77) Treated (n=37) Observed (n=37) P-value (n=37) Observed (n=

Figure S1. Time to Composite Endpoint According to Subclinical BKVAN Status at 6 Months Posttransplant. Kaplan-Meier plot comparing time to the composite endpoint between the subclinical BK virus-associated nephropathy group (SC-BKVAN) group and the no major surveillance abnormalities group (NMA) using the log-rank test. Hatch marks represent censored cases in each group.

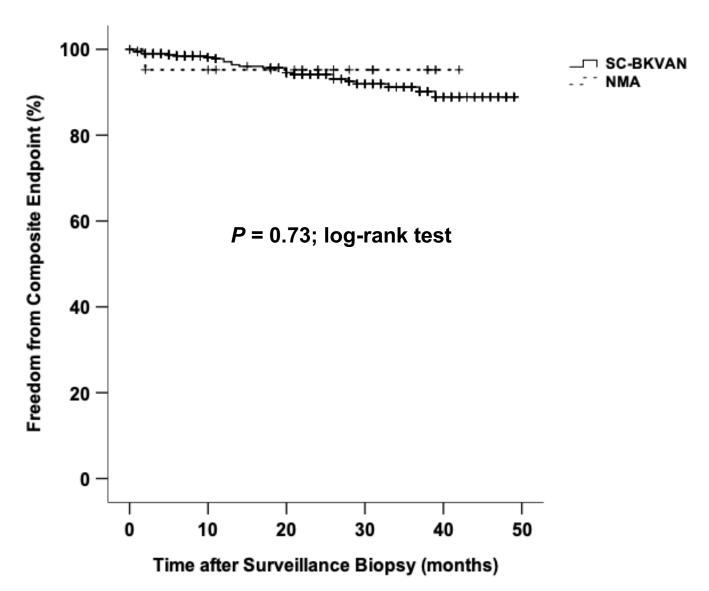


Figure S2. Sensitivity Analysis of the Time to Composite Endpoint According to Presence of Subclinical Inflammation. Kaplan-Meier plot comparing time to the composite endpoint between the subclinical inflammation group (SCI) and the no major surveillance abnormalities group (NMA) using the logrank test, after excluding all subclinical BK virus-associated nephropathy (SC-BKVAN) cases in a sensitivity analysis. Hatch marks represent censored cases in each group.

