

## SUPPLEMENTAL DIGITAL CONTENT (SDC)

TABLE S1. Clinical outcomes of 15 patients who had EBV PCR positive results

No.	Year of KT	Age at KT	Sex	EBV DNA in PBMCs (Max) (copies/ $\mu$ gDNA)	Baseline immuno-suppression	Treatment for positive EBV PCR	Rejection	Cancer	Graft loss
1	2007	4	M	$9.1 \times 10^3$ <sup>a</sup>	Tac/MMF/mPSL	None	No	No	No
2	2007	2	F	$1.5 \times 10^4$	Tac/MMF/mPSL	MMF was discontinued and Tac was reduced	No	No	No
3	2008	2	M	$1.5 \times 10^2$	Tac/MMF/mPSL	None	No	No	No
4	2009	14	F	$1.1 \times 10^3$ <sup>a</sup>	Tac/MMF/mPSL	None	T cell mediated rejection	Kidney cancer	Yes
5	2012	6	F	$1.7 \times 10^3$ <sup>a</sup>	CsA/MMF/mPSL	None	No	No	No
6	2013	6	M	$7.9 \times 10^3$	Tac/MMF/mPSL	MMF was discontinued and Tac was reduced	No	No	No
7	2013	13	M	$1.8 \times 10^2$	Tac/MMF/mPSL	None	No	No	No
8	2013	6	M	$1.7 \times 10^5$	CsA/MMF/mPSL	MMF was discontinued and CsA was reduced	No	No	No
9	2013	6	M	$3.0 \times 10^4$	Tac/MMF/mPSL	MMF was discontinued and Tac was reduced	No	No	No
10	2013	14	F	$2.8 \times 10^2$	CsA/MMF/mPSL	None	No	No	No
11	2014	10	M	$7.9 \times 10^2$	CsA/MMF/mPSL	None	No	No	No
12	2016	15	F	$6.2 \times 10^3$ <sup>a</sup>	CsA/MMF/mPSL	None	No	No	No
13	2016	5	F	$2.0 \times 10^3$ <sup>a</sup>	Tac/MMF/mPSL	None	No	No	No
14	2016	6	F	$2.0 \times 10^3$ <sup>a</sup>	Tac/MMF/mPSL	None	No	No	No
15	2016	15	M	$2.2 \times 10^2$	Tac/MMF/mPSL	None	No	No	No

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<sup>a</sup>Because high EBV viral load did not persist for 6 months, reduction and/or discontinuation of immunosuppressive drugs were not required.

CsA, cyclosporin; F, female; KT, kidney transplantation; M, male; MMF, mycophenolate mofetil; mPSL, methylprednisolone; PBMC, peripheral blood mononuclear cell; Tac, tacrolimus.

TABLE S2. Risk factors for cancer in pediatric kidney transplant recipients with available data of recipient EBV serological status (n=264) (univariate analysis)

Variable		Hazard Ratio, 95%CI <sup>a</sup>	P value
Recipient characteristics			
Age at transplantation	0-4	Reference	
	5-9	0.18 (0.01 - 1.88)	0.146
	10-14	0.27 (0.03 - 2.27)	0.208
	15-19	0.36 (0.04 - 3.00)	0.315
Sex	Male	Reference	
	Female	1.13 (0.25 - 5.07)	0.869
Cause of ESKD	CAKUT	Reference	
	FSGS	5.94 (0.57 - 127.71)	0.132
	Glomerulonephritis	9.23 (0.89 - 198.69)	0.062
	Other/unknown	3.90 (0.37 - 83.96)	0.248
Pretransplant immunosuppression for nephritis or NS		0.47 (0.02 - 2.75)	0.446
Pretransplant EBV serological status	Recipient seropositive	Reference	
	Recipient seronegative	8.48 (1.82 - 59.40)	0.0065
Pretransplant CMV serological status	Recipient seropositive	Reference	
	Recipient seronegative	0.88 (0.17 - 3.98)	0.864
Duration of dialysis before KT	0-2	Reference	
	3-12	0.85 (0.12 - 3.97)	0.849
PEKT		0.63 (0.03 - 3.69)	0.650
Donor characteristics			
Living donor		0.41 (0.09 - 2.86)	0.321
Transplant characteristics			
Transplant era	1983-2006	Reference	
	2007-2016	0.26 (0.01 - 1.65)	0.166
HLA mismatch (n=262)	0-2	Reference	
	3-6	0.58 (0.13 - 2.94)	0.482
Induction agent	Basiliximab	0.71 (0.15 - 3.94)	0.681
Functioning transplant		1.21 (0.20 - 23.06)	0.855

<sup>a</sup>95% lower confidence interval, <sup>b</sup>Patients who were treated with the regimen consisting of methylprednisolone and cyclosporin or tacrolimus were excluded.

AZA, azathioprine; CAKUT, congenital anomalies of the kidney and urinary tract; CMV, cytomegalovirus; EBV, Epstein-Barr virus; ESKD, end-stage kidney disease; FSGS, focal segmental glomerulosclerosis; KT, kidney transplantation; MMF, mycophenolate mofetil; MZ, mizoribine; NS, nephrotic syndrome; PEKT, pre-emptive kidney transplantation.

TABLE S3. Risk factors for cancer in pediatric kidney transplant recipients with available data of recipient EBV serological status (multivariable analysis)

Variable		Hazard Ratio, 95%CI <sup>a</sup>	P value
Cause of ESKD	CAKUT	Reference	
	FSGS	7.00 (0.67 - 150.97)	0.101
	Glomerulonephritis	9.44 (0.90 - 203.27)	0.060
	Other/unknown	7.03 (0.64 - 155.75)	0.107
Pretransplant EBV serological status	Recipient seropositive	Reference	
	Recipient seronegative	10.40 (2.11 - 76.14)	0.004

<sup>a</sup>95% lower confidence interval

CAKUT, congenital anomalies of the kidney and urinary tract; CMV, cytomegalovirus; ESKD, end-stage kidney disease; FSGS, focal segmental glomerulosclerosis.