

Supplementary materials

Table S1: DNA and RNA viral species screened in plasma samples of adult allo-HSCT recipients with specific qualitative and/or quantitative r(RT)-PCR assays.

DNA virus	RNA virus
<i>Herpesviridae</i>	<i>Picornaviridae</i>
Herpes simplex virus (HSV) 1/2	Enterovirus (EV)
Varicella zoster virus (VZV)	<i>Flaviviridae</i>
Epstein.Barr virus (EBV)	Human pegivirus 1 (HPgV-1)
Cytomegalovirus (CMV)	Human pegivirus 2 (HPgV-2)
Human herpesvirus 6 (HHV-6)	
Human herpes virus 7 (HHV-7)	
<i>Polyomaviridae</i>	
JC polyomavirus (JCPyV)	
BK polyomavirus (BKPyV)	
Merkel cell polyomavirus (MCPyV)	
Human polyomavirus 6 (HPyV6)	
Human polyomavirus 7 (HPyV7)	
Trichodysplasia spinulosa-associated polyomavirus (TSPyV)	
Human polyomavirus 9 (HPyV9)	
<i>Adenoviridae</i>	
Human adenovirus (HAdV)	
<i>Parvoviridae</i>	
Parvovirus B19 (B19V)	
Human bocavirus (HBoV)	
<i>Anelloviridae</i>	
Torque teno virus (TTV)	

Table S2: Detailed list of the r(RT-)PCR used in the study.

Virus detected	Assay	Elution volume used [uL]	Sequence (5' to 3')			Final [uM] Fwd/Rev/Probe	Lower limit of quantification	Reference
			Fwd primer	Probe	Rev Primer			
Epstein Barr virus	EBV	Not available	Not available	Not available	Not available	Not available	5.0E2 copies/ml	artus EBV QS-RGQ kit (Qiagen)/cobas® EBV (Roche)
Cytomegalovirus	CMV	Not available	Not available	Not available	Not available	Not available	5.6E1 IU/ml	RealTime CMV assay (Abbott)/cobas® CMV (Roche)
Herpes simplex virus 1/2	HSV-1/2 screening	5	HSV-F: CCGTCAGCACCTTCATCGA	HSVgb: FAM CCACGAGATCAAGGACAGCGGCC TAMRA	HSV-R: CGCTGGACCTCCGTGTAGTC	300/300/100	Not quantitative	Aubert M et al. ¹
	HSV-1/2 typing	5	GbTypF: CGCATCAAGACCACCTCCTC	GbTyp1: VIC TGGCAACGCGGCCAAC TAMRA	GbTypR: GCTCGCACCACGCGA	900/600/100 (each probe)	2.6E3 copies/ml	Corey L et al. ²
		5		GbTyp2: FAM CGGCGATGCGCCCCAG TAMRA			2.6E2 copies/ml	
Varicella Zoster virus	VZV	5	VZV UP: CGGCATGGCCCGTCTAT	VZV P: FAM ATTCAGCAATGGAAACACACGACGCC TAMRA	VZV DP: TCGCGTGCTGCGGC	600/600/200	2.6E2 copies/ml	Weidmann M et al. ³
Human herpesvirus 6	HHV-6 screening	5	HHV-6FRTAQ1: GACAATCACATGCCTGGATAATG	HHV-6PROBE: FAM AGCAGCTGGCGAAAGTGCTGTGC TAMRA	Taq2 RevHHV-6a+b: TGTAAGCGTGTGGTAATGGACTAA	600/600/200	Not applicable	Gautheret-Dejean A et al. ³
	HHV-6 quantitative	10	Not available	Not available	Not available	Not available	3.5E2 copies/ml	Human Herpes virus 6 kit (Genesig)
Human herpesvirus 7	HHV-7	10	Not available	Not available	Not available	Not available	2.6E3 copies/ml	Human Herpes Virus 7 genomes kit (Genesig)
JC polyomavirus	JCPyV screening	5	JCT-3: AGTGTGGGATCCTGTGTTTCA JRR-1: GGAGCCCTGGCTGCAT	JCT-1.2: FAM CATCACTGGCAAACAT NFQ MGB JRR-1.1: VIC CTGGCAGTTATAGTGAAAC NFQ MGB	JCT-4: GTGGGATGAAGACCTGTTTTC JRR-2: TGTGATTAAGGACTATGGGAGG	each primer: 300 each probe: 200	Not quantitative	Ryschkewitsch CF et al. ³
	JCPyV quantitative	10	Not available	Not available	Not available	Not available	1.25E2 copies/ml	JCV ELITe MGB kit (ELITechGroup)
Human polyomavirus 9	HPyV9	5	HPyV9-VP1-F: CTAGGGAACAATTTGAATATCAGGAA	HPyV9-VP1-Prb: FAM AAGTTAGGCTGAGGCGGGAGATAGGG BHQ1	HPyV9-VP1-R: ATAGTGTCAGATCTAGGCTCTGAAC	600/600/200	2.6E2 copies/ml	Rockett RJ et al. ⁴
Human adenovirus	HAdV screening	5	AQ2 For: GCCCCAGTGGTCTTACATGCACATC	AP: FAM TGCACCAGACCCGGGCTCAGTACTCCGA TAMRA	ADV Rev: GVGCCACGGTGGGGTTTCTAAACTT	900/900/200	Not quantitative	Adapted from Verheyen J et al. ⁵
	HAdV quantitative	10	Not available	Not available	Not available	Not available	2.0E2 IU/ml	Adenovirus R-gene kit (Argene)
Torque teno virus	TTV	5	TTV(Y)-F: GTTTTCYACGCCGTCC	TTV probe: FAM ACTCACCTHCGGCACCCGC BHQ1	TTV(Y)-R: CCTTGACTYCGGTGTGTAA	900/900/200	2.5E2 copies/ml	Masouridi-Levrat S et al. ⁶
Human pegivirus 1 and 2	HPgV-1	5	Pegivirusenseprimer: GGCGACCGGCCAAAA	Pegivirusprobe: FAM TGACCGGGATTACGACCTACCAACCT TAMRA	Pegivirusantisenseprimer: CTTAAGACCCACCTATAGTGGCTACC	900/900/200	2.6E3 copies/ml	Chivero ET et al. ⁷
	HPgV-2	5	HPgV-25UTR-F: CGCTGATCGTCAAAGGGATG	HPgV-25UTR-probe: FAM GCACCACTCCGTACAGCCTGAT TAMRA	HPgV-25UTR-R: GCTCCACGGACGTCACTGG	600/600/200	2.6E2 copies/ml	Frankel M et al. ⁸
BK virus	BK	10	Not available	Not available	Not available	Not available	5.0E2 copies/ml	BK Virus R-gene kit (Argene)
CDV (internal control)	CDV	5	CDV-for: GCTACCCAAGAAACCGTCATTG	CDV-probe: Yakima yellow CGTTCAGGGAGTCCAGGACTACGTCAAC BHQ1	CDV-rev: GCATGGCAGGGACGAGTT	900/900/200	Not quantitative	Cordey S et al. ⁹

Bocavirus 1/2/3/4	Bocavirus 1-4	5	HBov1F: CCTATATAAGCTGCTGCACTTCCTG HBov2-3-4F: GCACTTCCGCATYTCGTCAG	HBov1-4-probe: FAM CCAGAGATGTTCACTCGCCG MGB-Eclipse®	HBov1R: AAGCCATAGTAGACTCACCACAAG HBov3R: GTGGATTGAAAGCCATAATTTGA HBov2-4R: AGCAGAAAAGGCCATAGTGTA	each primer: 600 probe: 300	2.6E2 copies/ml	Kantola K et al. ¹⁰
Merkel Cell Polyomavirus	MCPyV	5	MCPyV-Fwd: CCCTTTGGAGCAAATTCCA	MCPyV-probe: FAM CAAAATATCCACAAGCTCAGAAGTGA TAMRA	MCPyV-Rev: CTGACCTCATCAAACATAGAGAA	600/600/250	2.6E2 copies/ml	Arvia R et al. ¹¹
Enterovirus	EV	5	Enterovirus/08 Fwd: GCTGCGYTGCGGCC	Enterovirus/08 pro: FAM CTCCGGCCCTGAATGYGGCTAA TAMRA	Enterovirus/08 Rev: GAAACACGGACACCCAAAGTAGT	900/900/200	6.E2 copies/ml	Tapparel C et al. ¹²
Parvovirus B19	B19	10	Not available	Not available	Not available	Not available	5.0E2 IU/ml	Parvovirus B19 R-gene kit (Argene)
Human polyomavirus 6	HPyV6	5	HPyV6-VP2-F: TTGAGGAGCTGGACAAAGAGATT	HPyV6-VP2-Prb: FAM AGGAAGATGCCTTGTCACAGAAAAGGAAATG BHQ1	HPyV6-VP2-R: TCTGGGAACCTTTGAATTGGT	600/600/200	2.6E2 copies/ml	Antonsson A et al. ¹³
Human polyomavirus 7	HPyV7	5	HPyV7-VP2-F: GAGGAAGGAAACACTCCCCAGTA	HPyV7-VP2-Prb: FAM ACTATACCTCAATGGATGCTTTTGT BHQ1	HPyV7-VP2-R: TTCACCTCTTTTGTAGCTCCTCAAG	900/900/250	2.6E2 copies/ml	Antonsson A et al. ¹³
Trichodysplasia spinulosa-associated polyomavirus	TSPyV	5	TSPyVa-F: TGGTGGATTCATGGCAGAAGAG	TSPyVa-probe: FAM TCTGGGTCTGCATGGTGTCAAA BHQ-1	TSPyVa-R: GCTGGTGGGAAAGCTTCAATC	600/600/250	2.6E2 copies/ml	Urbano PR et al. ¹⁴

Table S3: Co-detections and their prevalence among the 63 patients of group 3.

Viral species detected	Patients, N (%)
TTV	16 (25%)
HPgV-1	1 (2%)
TTV, HPgV-1	9 (14%)
TTV, BKPyV	3 (5%)
TTV, BKPyV, HPyV6	3 (5%)
TTV, JCPyV	3 (5%)
TTV, BKPyV, CMV	2 (3%)
TTV, BKPyV, JCPyV	2 (3%)
TTV, HPyV6	2 (3%)
TTV, HPyV6, HPyV7	2 (3%)
TTV, MCPyV	2 (3%)
TTV, BKPyV, HPyV6, MCPyV	1 (2%)
TTV, BKPyV, CMV, HPgV-1	1 (2%)
TTV, BKPyV, CMV, HPgV-1, HPyV6, HPyV7	1 (2%)
TTV, BKPyV, CMV, MCPyV, JCPyV, HPyV6	1 (2%)
TTV, CMV	1 (2%)
TTV, CMV, HPyV6	1 (2%)
TTV, CMV, MCPyV	1 (2%)
TTV, CMV, HPgV-1, HPyV6, HPyV7	1 (2%)
TTV, HHV-6	1 (2%)
TTV, BKPyV, HPyV6, HHV-7	1 (2%)
TTV, JCPyV, HPyV6, BKPyV, HPgV-1	1 (2%)
TTV, JCPyV, HPyV7	1 (2%)
TTV, JCPyV, HPyV6, HPgV-1	1 (2%)
TTV, HPyV7	1 (2%)
TTV, B19V	1 (2%)
TTV, HPgV-1, HPyV6	1 (2%)
TTV, HPgV-1, HPyV6, HPyV7	1 (2%)
TTV, HPgV-1, HPyV7	1 (2%)

The table describes the co-detections and their prevalence among the 63 patients of group 3 (20 viral species screened) with at least one virus detected at 3 months after allo-HSCT. No virus was detected in 1/64 patients of group 3 at month 3.

Abbreviations: CMV: cytomegalovirus; HHV-6: human herpes virus 6; HHV-7: human herpes virus 7; JCPyV: JC polyomavirus; BKPyV: BK polyomavirus; MCPyV: Merkel cell polyomavirus; HPyV6: human polyomavirus 6; HPyV7: human polyomavirus 7; B19V: parvovirus B19; TTV: torque teno virus; HPgV-1: human pegivirus 1.

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