

Table S1. Clinical characteristics of fifteen myelodysplastic syndrome patients with clonal cytogenetic evolution.

MDS Patients	Age	Gender	WHO Subtype	IPSS-R	Cytogenetic	Any Cytogenetic Changes During Disease	Time Lapse Between Samples (Days)	Progression to AML
P1 P1a P1b P1c P1d	10	M	RCMD	INT	46,XY[20] 46,XY[22] 46,XY,inv(10)(p11q21.2)[12]/46,XY[13] 46,XY,inv(10)(p11q21.2)[10] plus multiple breaks	Yes	P1a vs P1b = 32 P1b vs P1c = 35 P1c vs P1d = 29	Yes
P2 P2a P2b	11	F	RAEB-2	High	46,XX[20] 45,XX,-7[18]/46,XX[2]	Yes	P2a vs P2b = 28	Yes
P3 P3a P3b	63	M	RAEB-1	INT	46,XY[20] 46,XY,del(11)(q21)[13]/46,XY[7]	Yes	P2a vs P2b = 35	No
P4 P4a P4b P4c	55	F	RAEB-1	INT	46,XX[20] 46,XX,i(17)(q10)[18]/46,XX[2] 46,XX,i(17)(q10)[26]/46,XX,del(6)(q21q23)[6]/47,XX,+20[2]	Yes	P4a vs P4b = 36 P4b vs P4c = 31	Yes
P5 P5a P5b	5	M	RCMD	INT	46,XY[20] 45,XY,-8[13]/46,XY[19]	Yes	P5a vs P5b = 40	Yes
P6 P6a P6b	31	F	RAREB-2	INT	46,XX[14] 47,XX,+15[6]/46,XX[16]	Yes	P6a vs P6b = 37	No
P7 P7a P7b	82	F	RARS	INT	46,XX[20] 47,XX,+19[17]/46,XX[10]	Yes	P7a vs P7b = 48	No
P8 P8a P8b	69	F	5Q- SYND	INT	46,XX,del(5)(q22)[10]/46,XX[12] 46,XX,del(5)(q21)[4]/47,XX,+8[4]/46,XX[12]	Yes	P8a vs P8b = 57	No

P9 P9a P9b	46	M	RAREB-1	Very high	46,XY,der(11)t(1;11)(q21;q23)[23]/46,sl,+21,der(21;21)(q10;q10)[2]/46,XY[5] 46,XY,der(11)t(1;11)(q21;q23)[19]/46,sl,+21,der(21;21)(q10;q10)[2]/46,XY[1]	No	P9a vs P9b = 43	No
P10 P10a P10b	14	M	RCMD	INT	46,XY[24] 46,XY,del(11)(q23)[4]/46,XY[16]	Yes	P10a vs P10b = 33	No
P11 P11a P11b	62	M	RCUD	INT	46,XY[24] 46,XY,iso(17q)[10]/46,XY[15]	Yes	P11a vs P11b = 52	No
P12 P12a P12b	53	M	RCUD	INT	46,XY[20] 46,XY[22]	No	P12a vs P12b = 48	No
P13 P13a P13b	62	M	RCMD	INT	46,XY[25] 46,XY[27]	No	P13a vs P13b = 32	No
P14 P14a P14b	54	M	RCMD	INT	46,XY[23] 46,XY[22]	No	P14a vs P14b = 45	No
P15 P15a P15b	63	M	RCMD	INT	46,XY[20] 46,XY[25]	No	P15a vs P15b = 35	No

Table S2. Statistical Analysis of Telomere Parameters in each time point for fifteen myelodysplastic syndrome patients.

MDS Patients	Total Number of Signals		Total Number of Aggregates		Total Intensity		Average Intensity of all Signals		a/c Ratio		Nuclear Volume	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
P1												
P1a	51.1875000	2.81	4.31	0.54	898551.560	41473	18013.7526	683	6.91	1.16	305594.219	26409
P1b	56.5937500	2.81	4.58	0.52	832506.500	41473	15813.1412	683	7.51	1.16	322182.324	26409
P1c	35.5937500	2.81	6.03	0.54	563020.875	41473	15196.8115	683	8.20	1.12	349986.313	26409
P1d	40.2647059	2.73	6.78	0.54	427882.794	40234	10741.7303	662	10.13	1.16	455736.594	25621
p-values P1a vs P1b		0.17		0.33			0.26			0.70		0.65
P1a vs P1c		0.0009		0.05			<0.001			0.42		0.23
P1a vs P1d		0.0062		0.02			<0.001			0.05		<0.001
P1b vs P1c		<0.001		0.0017			<0.001			0.11		0.45
P1b vs P1d		<0.001		0.0044			<0.001			0.67		0.0004
P1c vs P1d		0.49		0.71			0.02			0.23		0.0052
P2												
P2a	36.4857143	2.9	1.96	0.43	454854.429	33649	12927.1573	684	11.91	0.80	412200.333	50133
P2b	21.4242424	3.0	4.17	0.42	180441.394	34654	8729.3935	705	16.02	0.82	427931.000	51629
p-value P2a vs P2b		<0.001		<0.001			<0.001			0.30		0.82
P3												
P3a	45.5666667	2.20	5.85	0.59	675100.281	39346	14580.8489	717	4.02	0.71	304639.906	29691
P3b	39.1333333	2.20	5.96	0.56	635317.971	37622	14181.4843	750	6.22	0.68	405023.371	28390
p-value P3a vs P3b		0.04		0.89			0.46			0.02		0.01
P4												
P4a	49.8529412	2.3	3.0	0.45	722683.882	36984	15469.6291	727	5.02	0.68	201680.469	20344
P4b	35.0909091	2.2	4.0	0.44	527161.781	35880	14982.7771	705	6.02	0.68	220601.147	19737
P4c	31.0909091	2.3	5.7	0.45	383203.121	36420	12155.3181	716	11.66	0.67	377879.061	20033
p-value P4a vs P4b		<0.001		0.14			0.0003			0.63		0.5
P4a vs P4c		<0.001		<0.001			<0.001			0.0016		<0.001
P4b vs P4c		0.23		0.0059			0.0067			0.0060		<0.001
P5												
P5a	48.1764706	2.36	5.52	0.52	844860.794	40370	17800.0734	668	5.53	0.63	216063.588	18646
P5b	47.8529412	2.36	6.2	0.52	672117.206	40370	14429.5174	668	6.43	0.63	228006.618	18646

P14a	49.2812500	2.8	5.00	0.46	419574.267	23257	9557.1312	440	19.63	1.66	1130028.40	91403
P14b	45.5714286	2.7	4.56	0.46	369984.767	23257	9558.1164	440	21.50	1.66	1115074.40	91403
p-value P14a vs P14b	0.34		0.50		0.60		0.99		0.42		0.90	
P15												
P15a	32.7666667	2.20	3.40	0.46	285431.167	23257	9158.3090	440	18.89	1.66	960903.63	91403
P15b	34.2000000	2.20	3.50	0.46	281497.367	23257	8318.3796	440	17.77	1.66	1082359.40	91403
p-value P15a vs P15b	0.64		0.87		0.99		0.17		0.63		0.34	