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Supplemental Information

Functional Dominance of CHIP-Mutated

Hematopoietic Stem Cells in Patients

Undergoing Autologous Transplantation

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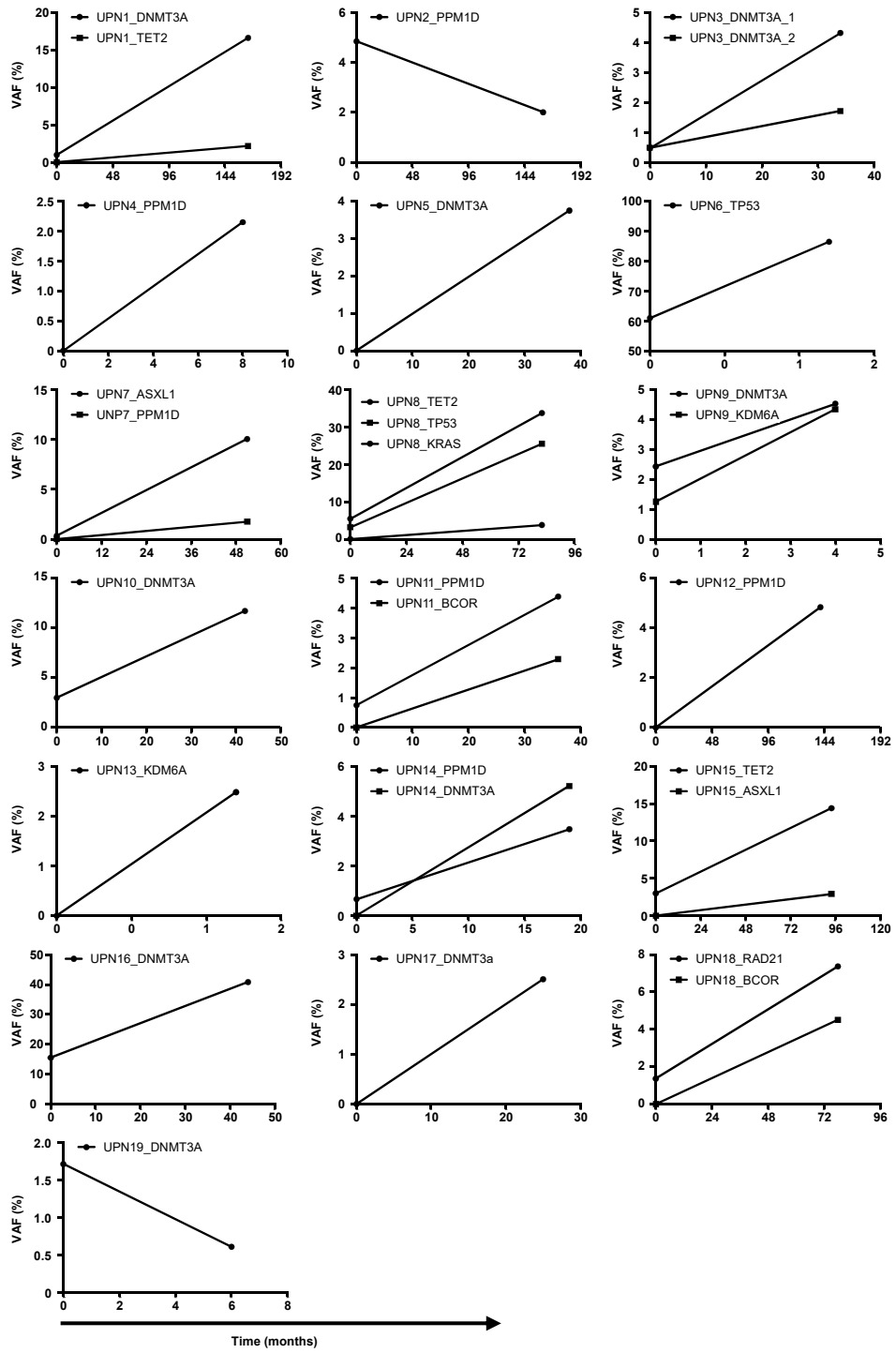


Figure S1. Comparison of variant allele frequencies (VAFs) of graft and first available peripheral blood sample. Related to Figures 2 and 3. Each graph represents one patient (UPN1-UPN19) and depicts one or multiple detected mutations and the time span between transplantation (at time point 0) and blood sample in months. UPN, unique patient number.

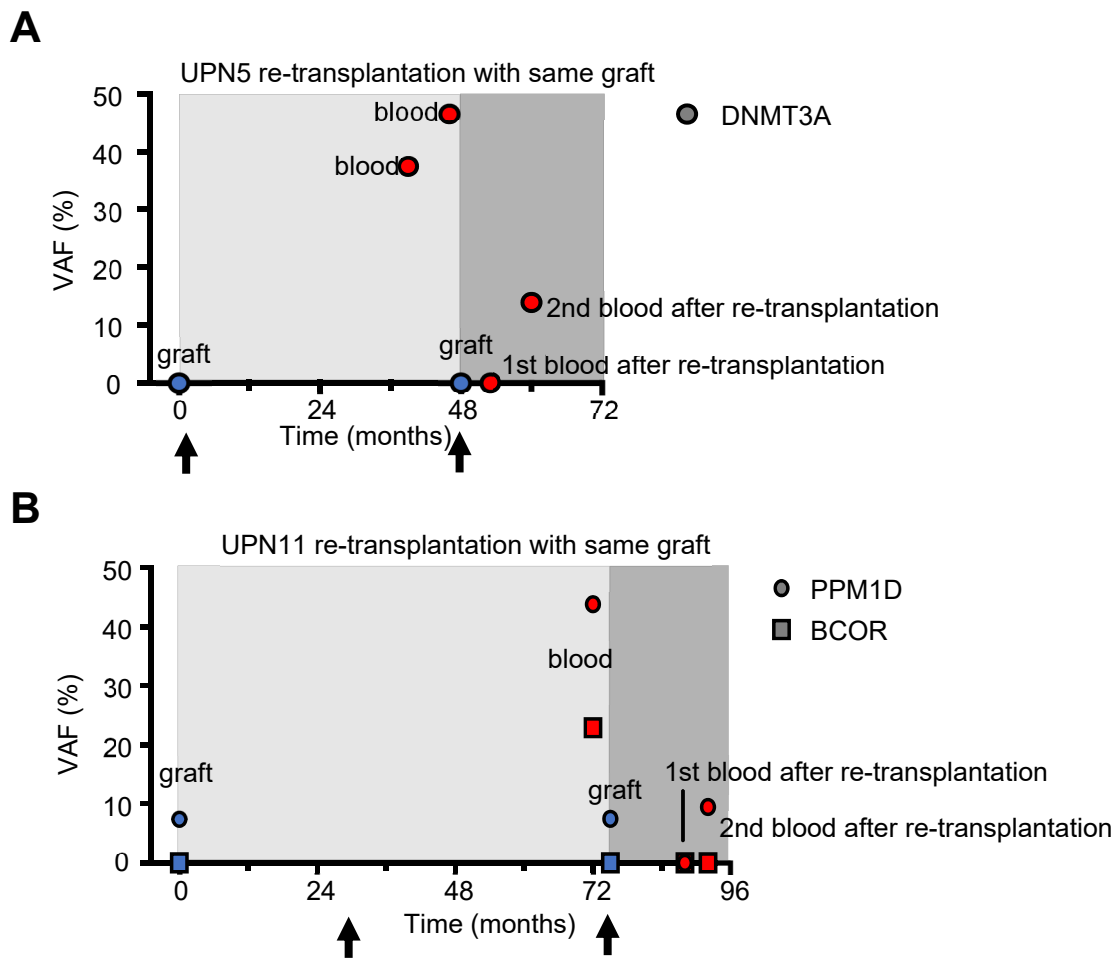


Figure S2. CHIP development of two patients undergoing a second transplantation. Related to Figures 3. Each graph shows the variant allele frequency (VAF) of the graft (DNMT3A mutation in patient UPN5 (A), PPM1D and BCOR mutation in patient UPN11 (B)), the post-transplantation blood sample(s) and blood samples taken after re-transplantation with the same graft. The time span after graft collection is shown on the x-axis. Arrows indicate ASCTs.

Table S3. Baseline characteristics of patient cohort according to CHIP status in collected graft. Related to Table 1.

Attribute	Total cohort (n=71)	CHIP positive in graft (n=9)	CHIP negative in graft and follow-up blood (n=62)	P-Value (CHIP positive versus negative)
Age at cancer diagnosis (years)	53.2±11.9 55.0 (47.0;63.0)	63.4±3.4 63.0 (60.0;67.0)	51.7±11.9 51.5 (44.0;61.0)	0.005*
Age at graft collection (years)	54.7±11.2 56.0 (48.0;64.0)	64.0±3.5 64.0 (60.5;67.5)	53.3±11.3 54.0 (47.0;62.0)	0.007*
Sex (female/male; n; n=71)	36/35	5/4	31/31	1.00
Therapy with cytostatic agents before autologous transplantation (yes/no; n; n=71)	64/7	8/1	56/6	1.00
Cancer diagnosis (multiple myeloma/lymphoma/germ cell tumor; n; n=71)	52/15/4	7/2/0	45/13/4	0.735
Days as inpatient during first transplantation	19.0±5.2 17.0 (15.0;21.5) (n=69)	22.6±6.0 22.5 (16.5;28.5) (n=8)	18.5±4.9 17.00 (15.0;20.0) (n=61)	0.035*
Days to neutrophil engraftment ^a during first transplantation	6.8±1.6 7.0 (5.5;7.5) (n=69)	7.8±0.9 7.5 (7.0;8.8) (n=8)	6.7±1.6 7.0 (5.0;7.0) (n=61)	0.068
Hospitalization in days/follow-up year after transplantation ^b	9.3±27.2 2.0 (0;7.9)	5.2±9.1 0.3 (0;7.3)	9.9±28.9 2.1 (0;8.0)	0.635
Hospitalization after first transplantation ^b (yes/no; n; n=71)	41/30	5/4	36/26	1.00
Absolute number of collected CD34+ cells (x10 ⁶)	825.8±284.9 812.3 (514.4;1101.0) (n=63)	666.4±284.9 284.9 (517.0;776.0) (n=7)	846.5±396.4 865.5 (511.3;1143.8) (n=56)	0.235
Number of collected CD34+ cells (x10 ⁶ / kg bodyweight)	11.2±5.2 10.3 (7.5;15.2) (n=63)	8.9±4.1 7.5 (6.3;12.1) (n=7)	11.5±5.3 10.5 (7.8; 15.3) (n=56)	0.209
Death at last follow-up (yes/no; n; n=71)	12/59	3/6	9/53	0.172
Progress of cancer at last follow-up (yes/no; n; n=71)	32/39	6/3	26/36	0.282

Continuous variables are shown as mean ± standard deviation; median (interquartile range), categorical variables are shown as absolute numbers. An asterisk (*) indicates significant p values (p < 0.05).

^a First day of neutrophils below 500 /mm³ to day before neutrophils over 500/mm³.

^b Excluding hospitalizations for prescheduled transplantation.