Adverse prognostic impact of *KIT* exon 17 mutations despite negative flow cytometric measurable residual disease in pediatric acute myeloid leukemia with *RUNX1::RUNX1T1*

Authors

Shota Kato,[1*] Shin-Ichi Tsujimoto,[2*] Jun Matsubayashi,[3] Shotaro Iwamoto,[4] Hidefumi Hiramatsu,[5] Yusuke Okuno,[6] Tatsuya Kamitori,[5] Kentaro Ohki,[7] Takao Deguchi,[8] Nobutaka Kiyokawa,[7] Motohiro Kato,[1] Junko Takita,[5] Shiro Tanaka,[9] Souichi Adachi,[10] Daisuke Tomizawa[11] and Norio Shiba[2]

[1]Department of Pediatrics, Graduate School of Medicine, the University of Tokyo, Tokyo; [2]Department of Pediatrics, Yokohama City University Graduate School of Medicine, Yokohama; [3]Center for Clinical Research and Advanced Medicine, Shiga University of Medical Science, Otsu; [4]Department of Pediatrics, Graduate School of Medicine Mie University, Tsu; [5]Department of Pediatrics, Graduate School of Medicine Kyoto University, Kyoto; [6]Department of Virology, Nagoya City University Graduate School of Medical Sciences, Nagoya; [7]Department of Pediatric Hematology and Oncology Research, National Research Institute for Child Health and Development, Tokyo; [8]Division of Cancer Immunodiagnostics, Children's Cancer Center, National Center for Child Health and Development, Tokyo; [9]Department of Clinical Biostatistics, Graduate School of Medicine, Kyoto University, Kyoto; [10]Human Health Science, Graduate School of Medicine Kyoto University, Kyoto and [11]Division of Leukemia and Lymphoma, Children's Cancer Center, National Center for Child Health and Development, Tokyo, Japan

**SK and S-IT contributed equally as first authors.*

Correspondence:
N. SHIBA - nshiba@yokohama-cu.ac.jp

https://doi.org/10.3324/haematol.2024.286243

Received: July 8, 2024.
Accepted: August 28, 2024.
Early view: September 5, 2024.

SUPPLEMENTAL MATERIALS

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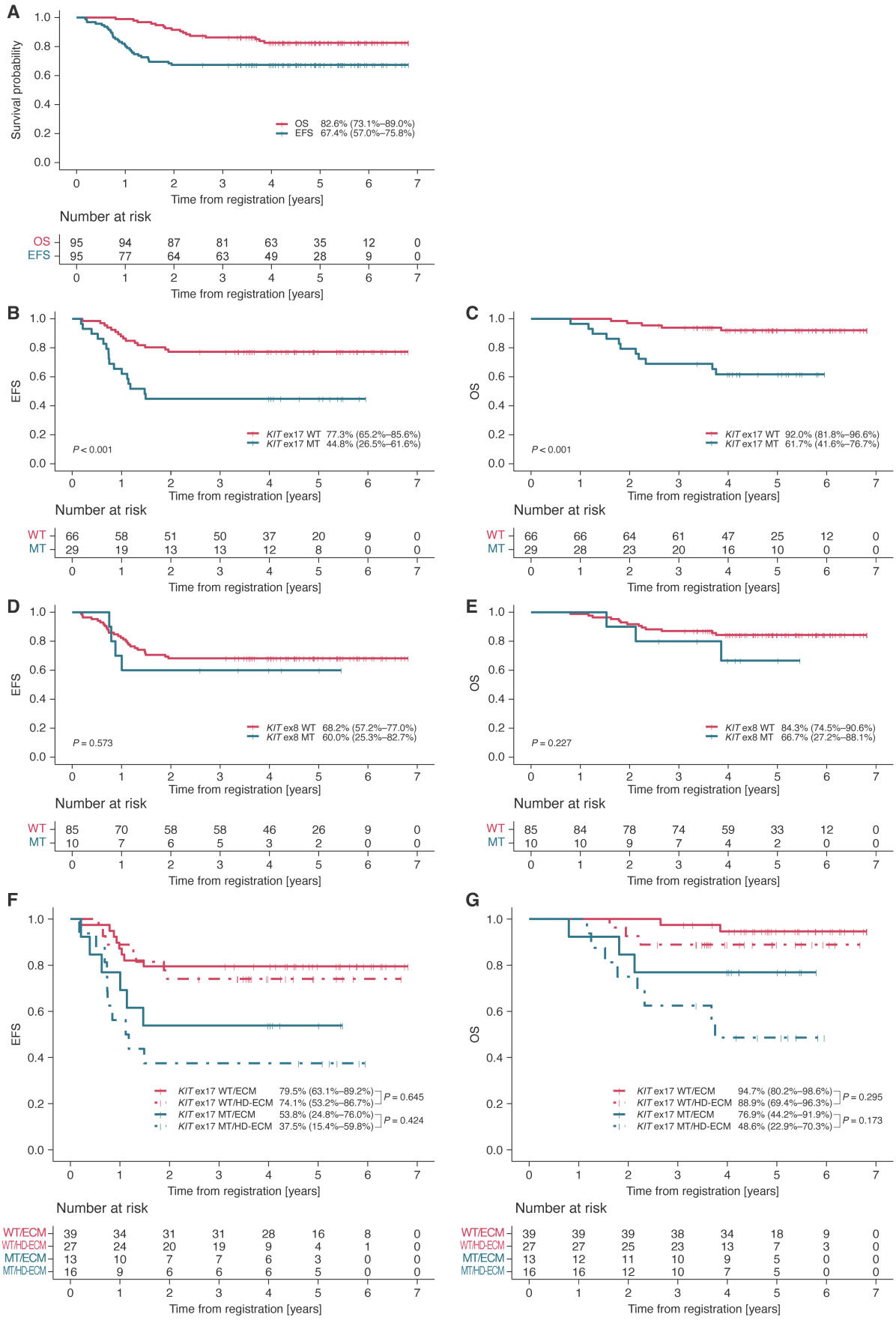
Supplemental Table S1. Patient characteristics in the AML-12 cohort

Characteristics	All N = 95	*KIT* exon 17 WT N = 66 (69.5%)	*KIT* exon 17 MT N = 29 (30.5%)	*P*
Sex, N (%)				0.658
Male	50 (52.6)	36 (54.5)	14 (48.3)	
Female	45 (47.4)	30 (45.5)	15 (51.7)	
Age at Dx, years				0.958
Median	9.7	9.7	9.7	
Range	2.2–17.9	2.2–17.9	3.5–16.4	
WBC in PB at Dx, $\times 10^9$/L				***0.014***
Median	11.3	10.1	15.4	
Range	1.0–276.1	1.0–162.5	3.8–276.1	
Blast in BM at Dx, %				0.916
Median	52.1	52.7	52.0	
Range	2.9–91.9	2.9–91.9	24.7–89.0	
Immunophenotypic expression, N (%)[a]				
CD117	72 (93.5)	49 (92.5)	23 (95.8)	1.000
CD33	64 (83.1)	43 (81.1)	21 (87.5)	0.744
CD19	47 (61.0)	38 (71.7)	9 (37.5)	***0.006***
CD56	41 (53.9)	24 (45.3)	17 (73.9)	***0.026***
CNS involvement, N (%)				1.000
CNS1 or 2	93 (97.9)	64 (97.0)	29 (100)	
CNS3	2 (2.1)	2 (3.0)	0 (0.0)	
Karyotype, N (%)				
8	1 (1.1)	1 (1.5)	0 (0.0)	1.000
Complex	7 (7.4)	4 (6.1)	3 (10.3)	0.433
FLT3-ITD, N (%)	5 (5.3)	4 (6.1)	1 (3.4)	1.000
Treatment allocation, N (%)				0.264
ECM	52 (54.7)	39 (59.1)	13 (44.8)	
HD-ECM	43 (45.3)	27 (40.9)	16 (55.2)	

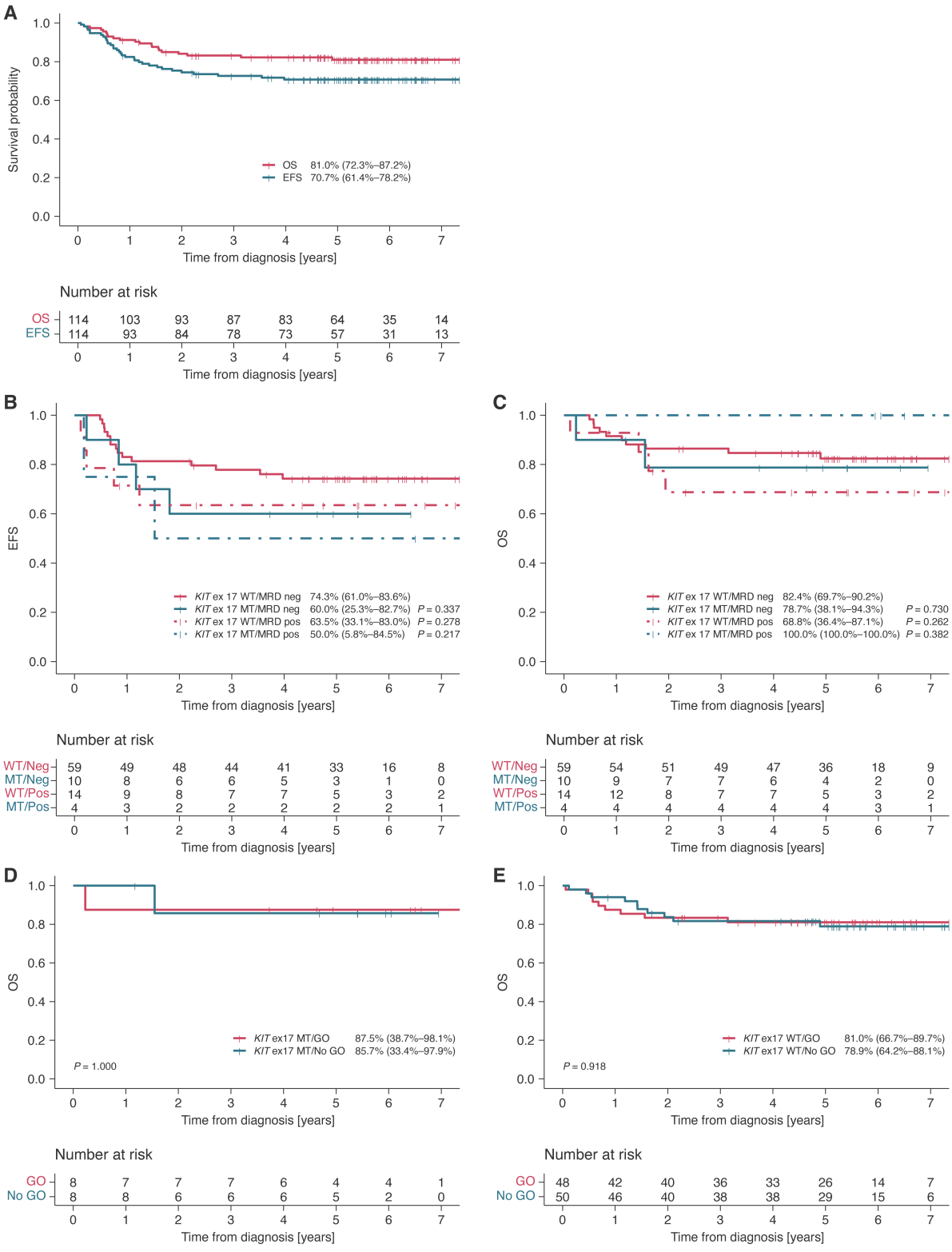
[a]Cell surface antigen expression was considered positive with a cutoff at 20% of the CD45-gated cells. Flow cytometry data on CD117 (KIT protein), CD33, and CD19 expression were not available for 18 cases (13 and 5 cases without and with *KIT* exon 17 mutations, respectively) and flow cytometry data on CD56 expression were not available for 19 cases (13 and 6 cases without and with *KIT* exon 17 mutations, respectively).

Dx, diagnosis; PB, peripheral blood; BM, bone marrow; CNS, central nervous system; WT, wild-type; MT, mutated; ITD, internal tandem duplication.



Supplemental Figure S1 (See next page for caption)

Supplemental Figure S1. Survival curves from registration of the patients with *RUNX1*::*RUNX1T1*-positive AML in the AML-12 cohort. (A) EFS and OS of all patients. (B) EFS according to *KIT* exon 17 mutational status. (C) OS according to *KIT* exon 17 mutational status. (D) EFS according to *KIT* exon 8 mutational status. (E) OS according to *KIT* exon 8 mutational status. (F) EFS according to *KIT* exon 17 mutational status and the induction treatment arms. (G) OS according to *KIT* exon 17 mutational status and the induction treatment arms. The 5-year survival probabilities with 95% confidence intervals are depicted on each panel. ex17, exon 17; ex8, exon 8; WT, wild-type; MT, mutated.



Supplemental Figure S2. Survival curves of the patients with *RUNX1*::*RUNX1T1*-positive AML in the TARGET cohort. (A) EFS and OS in all patients. (B) EFS in all patients according to both *KIT* exon 17 status and flow-MRD levels at EOI1. (C) OS in all patients according to both *KIT* exon 17 status and flow-MRD levels at EOI1. (D) OS in the patients with *KIT* exon 17 mutations according to GO treatment. (E) OS in the patients without *KIT* exon 17 mutations according to GO treatment. The

5-year survival probabilities with 95% confidence intervals are depicted on each panel. *P* values compared to patients without *KIT* exon 17 mutations and with negative MRD are presented in the panels C and D. neg, negative; pos, positive; ex17, exon 17; WT, wild-type; MT, mutated.