

## SUPPLEMENTAL APPENDIX

**Table S1.** Univariate and multivariate Cox model for overall survival

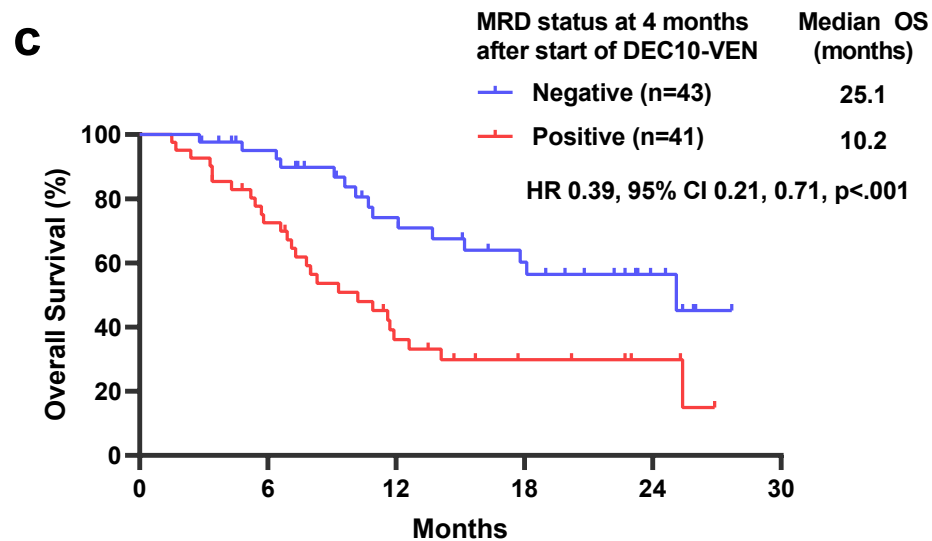
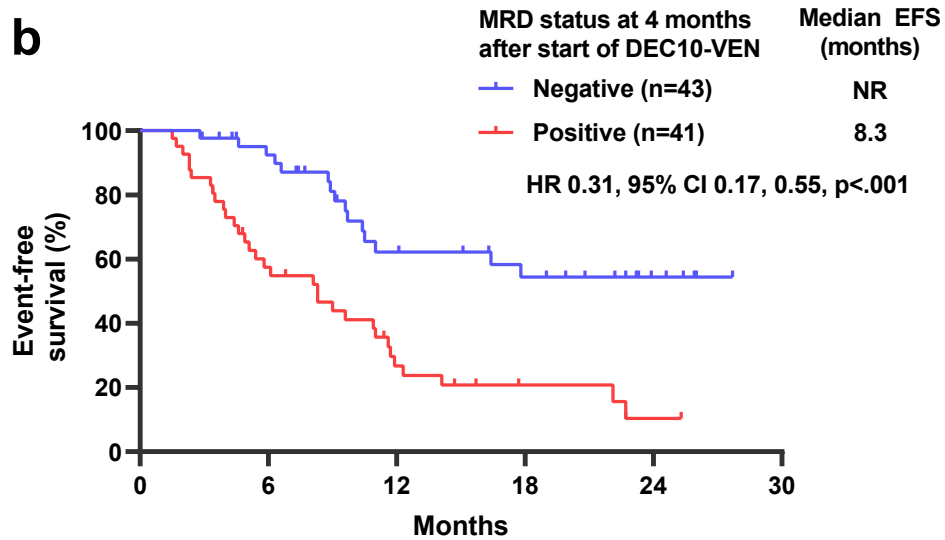
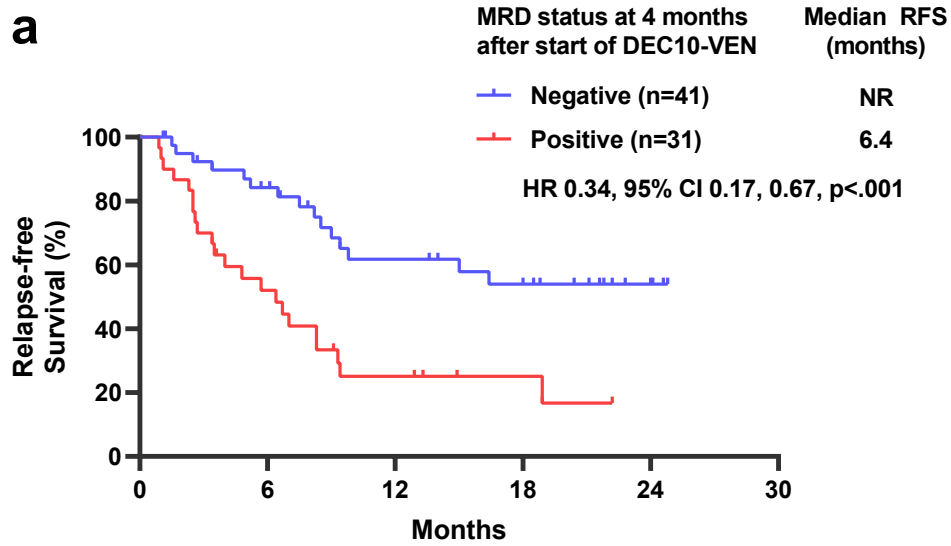
Clinical characteristic	Univariate analysis		Multivariate analysis	
	Hazard ratio (95% CI)	p	Hazard ratio (95% CI)	p
Age	1.01(0.96,1.06)	0.758		
Bone marrow blast percentage	0.99(0.98,1.01)	0.364		
ECOG PS 0-1 vs 2-3	1.47(0.79,2.71)	0.220		
ELN adverse vs intermediate risk cytogenetics	3.12(1.74,5.59)	0.000		
<i>NPM1</i> <sup>mut</sup> vs wild type	0.27(0.11,0.63)	0.002		
<i>FLT3</i> -ITD/ <i>TKD</i> <sup>mut</sup> vs wild type	0.30 (0.09,0.98)	0.045		
<i>RUNX1</i> <sup>mut</sup> vs wild type	1.05(0.51,2.17)	0.894		
<i>ASXL1</i> <sup>mut</sup> vs wild type	0.93(0.42,2.08)	0.858		
<i>TP53</i> <sup>mut</sup> vs wild type	6.11(3.25,11.49)	0.000	3.90 (1.62,9.42)	0.0025
<i>IDH1/2</i> <sup>mut</sup> vs wild type	0.20 (0.07,0.57)	0.002	0.09 (0.02,0.40)	0.0017
<i>N/KRAS</i> <sup>mut</sup> vs wild type	1.22(0.65,2.32)	0.536		
Response: CR/CRi vs MLFS	0.42(0.21,0.84)	0.014	0.26 (0.09,0.74)	0.0112
MRD at 2-month, positive vs negative	4.97(2.14,11.57)	0.000	3.81 (1.48,9.81)	0.0055
HSCT vs no HSCT (as a time-dependent variable)	0.35 (0.12, 0.97)	0.045		
Newly diagnosed AML vs. untreated sAML	0.31 (0.15,0.66)	0.003		
Treated sAML vs. untreated sAML	0.40 (0.16,0.99)	0.049		

ECOG = Eastern Co-operative Oncology Group, ELN = European LeukemiaNet 2017, CR = complete response, CRi = CR with incomplete hematologic recovery, MLFS = morphologic leukemia-free state, MRD = measurable residual disease by flow cytometry, HSCT = allogeneic stem-cell transplantation, sAML = secondary AML, treated sAML = secondary AML with prior therapy for antecedent hematological disorder but not for AML.

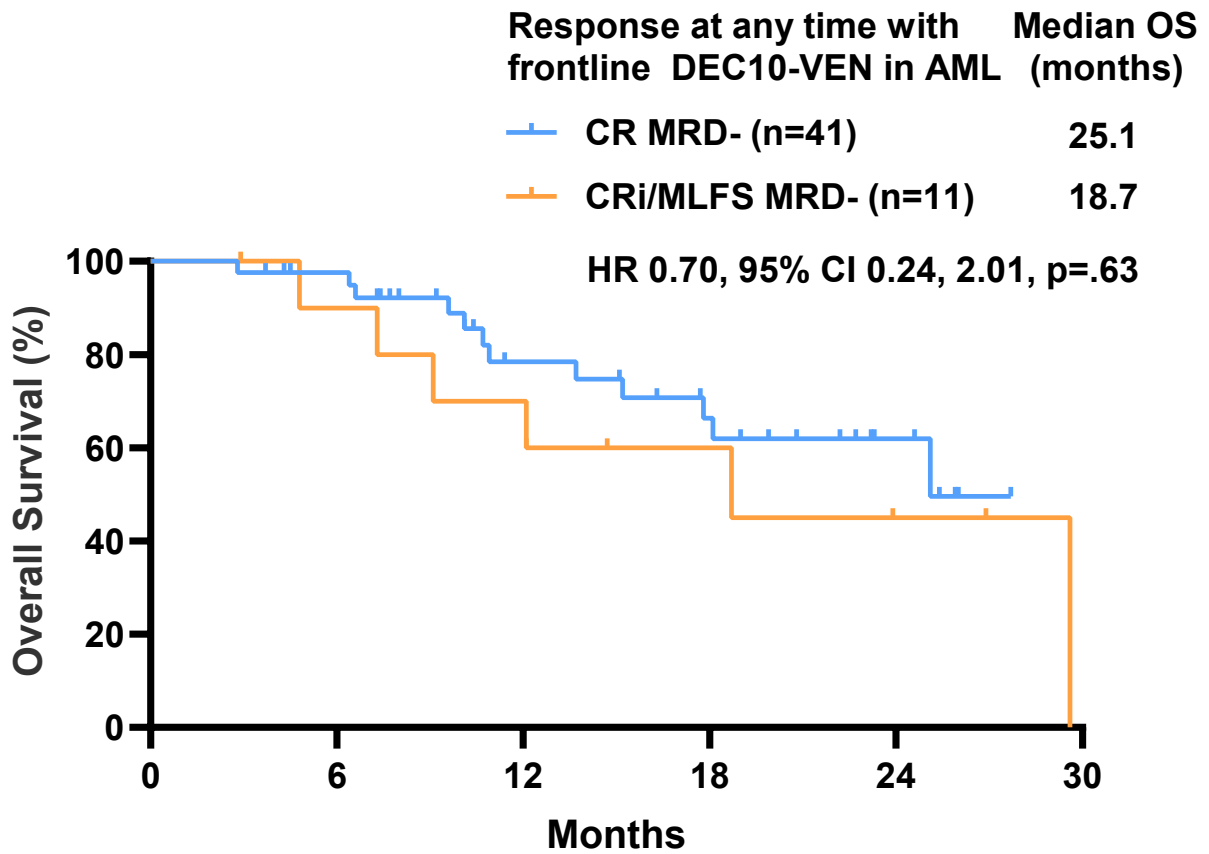
**Table S2.** Univariate and multivariate Fine-Gray model for relapse-free survival censored at allogeneic stem-cell transplantation

Clinical characteristic	Univariate analysis		Multivariate analysis	
	Hazard ratio (95% CI)	p	Hazard ratio (95% CI)	p
Age	0.98 (0.93,1.04)	0.49		
Bone marrow blast percentage	1.00 (0.98, 1.02)	0.93		
ECOG PS 0-1 vs 2,3	0.77 (0.34, 1.78)	0.55		
ELN adverse vs intermediate risk cytogenetics	3.90 (1.83,8.29)	0.0004		
<i>NPM1</i> <sup>mut</sup> vs wild-type	0.20 (0.06,0.67)	0.009		
<i>FLT3</i> -ITD/TKD <sup>mut</sup> vs wild type	0.31 (0.07,1.38)	0.12		
<i>RUNX1</i> <sup>mut</sup> vs wild type	0.92 (0.40,2.13)	0.85		
<i>ASXL1</i> <sup>mut</sup> vs wild type	0.88 (0.34, 2.23)	0.78		
<i>TP53</i> <sup>mut</sup> vs wild type	4.91 (2.33,10.30)	<0.001	78.98 (13.04, 478.53)	<0.0001
<i>IDH1/2</i> <sup>mut</sup> vs wild type	0.46 (0.16,1.33)	0.15		
<i>N/KRAS</i> <sup>mut</sup> vs wild type	2.13 (1.00,4.51)	0.05		
MRD at 2-month, positive vs negative	2.44 (0.91,6.56)	0.077	1.73 (0.66, 4.57)	0.27
Newly diagnosed AML vs. untreated sAML	0.49 (0.16,1.45)	0.20		
Treated sAML vs. untreated sAML	0.61 (0.17,2.15)	0.44		

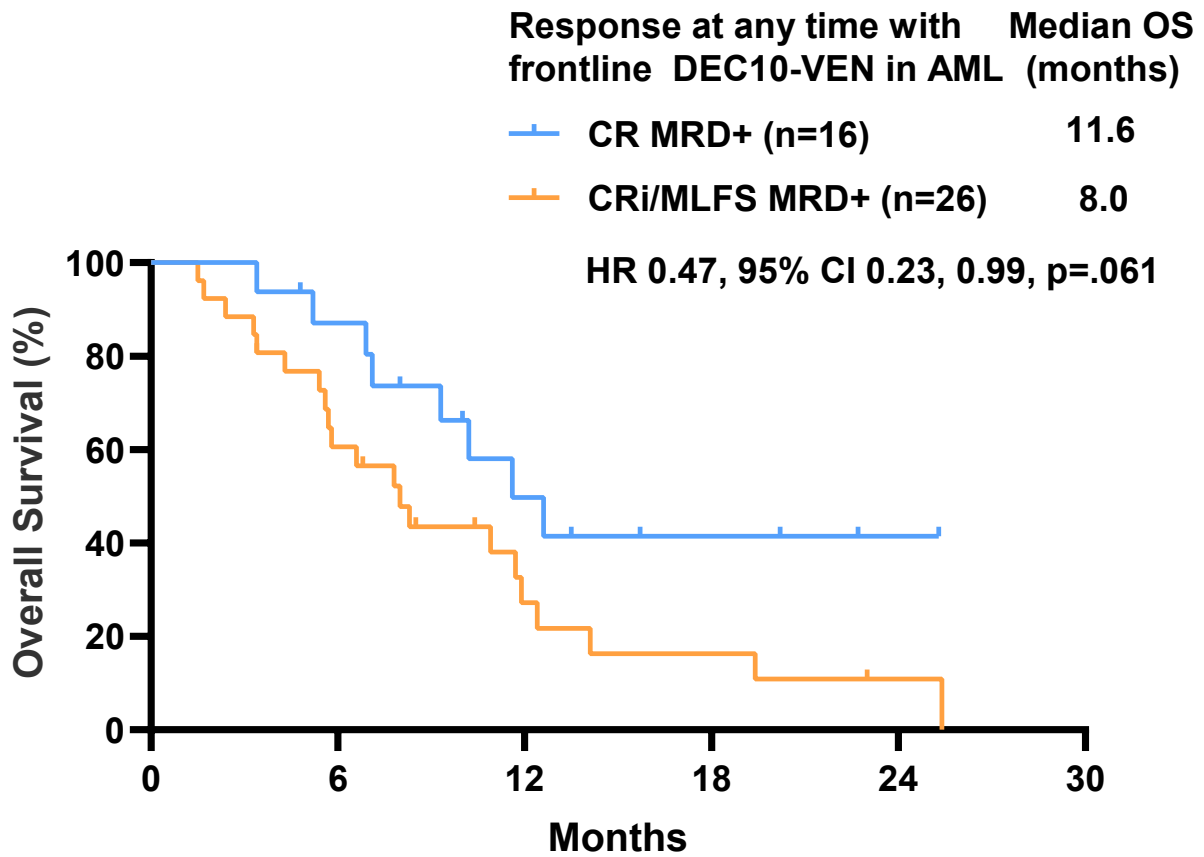
ECOG = Eastern Co-operative Oncology Group, ELN = European LeukemiaNet 2017, CR = complete response, CRi = CR with incomplete hematologic recovery, MLFS = morphologic leukemia-free state, MRD = measurable residual disease by flow cytometry, sAML = secondary AML, treated sAML = secondary AML with prior therapy for antecedent hematological disorder but not for AML.



**Fig. S1.** Outcomes by measurable residual disease (MRD) status at 4 months after starting decitabine and venetoclax, **a.** relapse-free survival (RFS), **b.** event-free survival (EFS), and **c.** overall survival (OS).



**Fig. S2.** Median overall survival (OS) of patients achieving negative measurable residual disease (MRD-) at any time by morphologic response status of complete remission (CR) vs. CR with incomplete hematologic recovery (CRi) or morphologic leukemia-free state (MLFS).



**Fig. S3.** Median overall survival (OS) of patients with persistent measurable residual disease (MRD+) by morphologic response status of complete remission (CR) vs. CR with incomplete hematologic recovery (CRi) or morphologic leukemia-free state (MLFS).