

Supplemental Table 1.

Patient Demographics Stratified by those that had Cardiac Dysfunction defined by > 15% Relative Change in Global Longitudinal Strain and/or \geq 10% Absolute Decrease in Left Ventricular Ejection Fraction (LVEF) Compared with Baseline

	Cardiac Dysfunction n=12	No Cardiac Dysfunction n=40	p Value*
Age, median (range), y	15.3 (10-30)	12.8 (4-27)	0.092
Male, n (%)	11 (91.7%)	30 (75%)	0.42
Diagnosis	ALL, n (%)	11 (91.7%)	0.41
	NHL, n (%)	1 (8.3%)	
Primary refractory	4 (33.3%)	9 (22.5%)	0.096
Prior lines of therapy	>4, n (%)	0 (0%)	
	2-4, n (%)	12 (100%)	31 (77.5%)
Prior HSCT	0, n (%)	6 (50%)	0.74
	1, n (%)	6 (50%)	
	2, n (%)	0 (0%)	
Prior TBI, n (%)	6 (50%)	17 (42.5%)	0.74
Prior immunotherapy, n (%)	2 (16.7%)	9 (22.5%)	1.00
Prior anthracycline exposure, median (range), doxorubicin equivalents	202 (110-571)	205 (70-620)	0.69
Baseline left ventricular ejection fraction, median (range), %	61% (50-70%)	60% (50-72%)	0.77
Baseline left ventricular global strain, median (range), % n=37	18.2% (14.1 to 22.2 %)	16.8% (14.1 to 23.5 %)	0.78
Performance status, median (range) %	90% (40-100%)	90% (50-100%)	0.11
Cardiac dysfunction is defined as a \geq absolute 10% decrease in left ventricular ejection fraction (LVEF) compared with baseline, new onset left ventricular systolic dysfunction \geq grade 2, LVEF < 50%, or >15% relative reduction in left ventricular global longitudinal strain (GLS) compared with baseline; Global longitudinal strain (GLS) is presented in absolute numbers [%].			

Supplemental Table 2.

Characteristics of Patients with Cytokine Release Syndrome (CRS) Stratified by those that had Cardiac Dysfunction defined by > 15% Relative Change in Global Longitudinal Strain and/or \geq 10% Absolute Decrease in Left Ventricular Ejection Fraction (LVEF) Compared with Baseline

	Cardiac Dysfunction n=12	No Cardiac Dysfunction n=25	
Time to onset of CRS, median (range), d	3 (1-7)	6 (1-12)	0.052
CRS Max Grade [^]	1, n (%)	1 (8.3%)	0.43**
	2, n (%)	7 (58.3%)	
	3, n (%)	2 (16.7%)	
	4, n (%)	2 (16.7%)	

ASTCT CRS Max Grade [#]	1, n (%)	1 (8.3%)	15 (60%)	0.006**
	2, n (%)	3 (25%)	6 (24%)	
	3, n (%)	6 (50%)	3 (12%)	
	4, n (%)	2 (16.7%)	1 (4%)	
Duration of fever > 38, median (range), d		5 (3-11)	5 (1-14)	0.10
Duration of fever > 40, median (range), d		4 (1-6)	2 (1-6)	0.19
Duration of tachycardia [@] , median (range), d		7 (2-9)	5 (1-30)	0.75
ICU transfer, n (%)		11 (91.6%)	10 (40%)	0.004
Received Tocilizumab, n (%)		4 (33%)	3 (12%)	0.18
Received steroids, n (%)		3 (25%)	1 (4%)	0.090
Required vasopressor support	1 agent	4 (33%)	2 (8%)	0.11 ^s
	>1 agent	1 (8.3%)	2 (8%)	
Required milrinone, n (%)		1 (8.3%)	0	0.32
Required mechanical ventilation, n (%)		3 (25%)	1 (4%)	0.090
<p>Cardiac dysfunction is defined as a $\geq 10\%$ absolute decrease in left ventricular ejection fraction (LVEF) compared with baseline, new onset left ventricular systolic dysfunction \geq grade 2, LVEF < 50%, or >15% relative reduction in left ventricular global longitudinal strain (GLS) compared with baseline. Intensive care unit, ICU; [#]CRS Max Grade as per Lee, et al. Blood 2014; [@]American Society for Transplantation and Cellular Therapy (ASTCT) CRS grading was retrospectively incorporated; [@]n=36; *The <i>p</i> value is comparing treatment course characteristics of those with and without cardiac dysfunction. **CRS grading compared mild CRS, grade 1/2 vs severe CRS, grade 3/4; ^s<i>p</i> value compared requiring any pressor support vs none in those with and without cardiac dysfunction.</p>				

Supplemental Table 3:**Characteristics of Patients with Cardiac Dysfunction including those that had > 15% Relative Change in Global Longitudinal Strain**

Patient	Prior Anthracycline Exposure (mg/m ²)	Baseline LVEF	Lowest LVEF	Baseline LVGLS	Lowest LVGLS	Max CRS [^] grade	Vasoactive support?	Troponin Elevation?	Peak Troponin (ng/mL)
14	360	64%	20%	Not performed ^s	7.6%	4	Yes	Yes	6.23
16	110	70%	45%	18.7%	14.1%	3	No	Yes	0.117
22	210	55%	50%	15.9%	10.3%	2	Yes	Not performed	--
25	238	58%	65%	18.8%	12.1%	2	No	Not performed	--
32	270	65%	60%	19.5%	15.2%	2	No	Not performed	--
38	100	65%	60%	22.2%	14.3%	1	No	Not performed	--

39	195	60%	25%	14.6%	5.9%	3	No	Yes	0.113
45	570	55%	10%	14.1%	5.3%	4	Yes	No*	<0.010
46	181	60%	64%	21.8%	17.9%	2	No	No*	<0.010
49	100	65%	65%	17.8%	13.9%	2	Yes	Not performed	--
51	355	50%	40%	11.6%	12.5%	2	No	No*	<0.010
52	180	61%	45%	Not performed [#]	14%	2	Yes	Yes	0.016
<p>Cardiac dysfunction is defined as a $\geq 10\%$ absolute decrease in left ventricular ejection fraction (LVEF) compared with baseline, new onset left ventricular systolic dysfunction \geq grade 2, LVEF < 50%, or >15% relative reduction in left ventricular global longitudinal strain (GLS) compared with baseline; Global longitudinal strain (GLS) is presented in absolute numbers [%] [§]Outside baseline echo; [#]GLS was not able to be performed due to image quality on baseline echo; [^]CRS Max Grade as per Lee, et al. Blood 2014. *Troponin levels were drawn and undetectable, lower limit of detection 0.010 ng/mL</p>									