

Emapalumab as salvage therapy for adults with malignancy-associated hemophagocytic lymphohistiocytosis

Authors

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Supplemental table 1: Clinical characteristics prior to emapalumab and best ferritin responses with emapalumab treatment

ID	Malignancy	Age (y)	No. of prior malignancy therapies	Last malignancy-directed therapy	Total dose (in mg) of etoposide received prior to emapalumab initiation	Ferritin (ng/mL)	sIL2r (pg/mL)	Phagocytosis on BMB	WBC (K/ μ L)	Platelet count (K/ μ L)	Tbili (mg/dL)	AST (u/L) / ALT (u/L)	No. of HLH-2004 criteria*	Splenomegaly	Hepatomegaly	PET/CT details of liver	Other infection†	Precipitating cause of death or indication for hospice/comfort measures	Best ferritin response (ng/mL)
1	EBV+ DLBCL / stage IVB MF	58	9	CEP	200	12,283	NE	Y	0.4	5	5.4	103 / 67	5‡	Y	Y	Heterogenous uptake (SUV 2.8)	Y	MODS from sepsis	NE
2	PTCL-NOS	73	0	NA	0	7,683	>20,000	Y	281.00 [§]	115	2.2	547 / 61	5	N	N	Heterogenous uptake (SUV 4.4)	N	Cardiac arrest with M-HLH	NE
3	PTCL-NOS	69	3	GemE	502	372,503 [‡]	>20,000	NE	0.1	17	4.3	495 / 288	4‡	Y	N	No abnormal uptake	Y	Toxic metabolic encephalopathy with M-HLH	92,611
4	THRLBCL	54	4	Tafa + Len	300	17,798	>20,000	NE	5.5	29	15.6	263 / 801	4	Y	N	Diffuse uptake, hypodense lesions (SUV 8.5)	N	POM	NE
5	EBV+ PTLT	46	1	Rituximab	375	42,594	>20,000	Y	0.1	10	23.3	226 / 178	6	Y	Y	Diffuse uptake (SUV 5.7)	Y	MODS with M-HLH and DAH	23,717
6	ALK- ALCL	54	5	BV	0	20,735	19,205	Y	8.7	6	2.3	68 / 35	6	Y	Y	No abnormal uptake	N	MODS with M-HLH and ARDS	NE
7	PTCL-TFH	69	2	Romi + Duve	234	8,536	NE	Y	1.1	5	2	23 / 13	5‡	Y	N	No abnormal uptake	Y	MODS with M-HLH	3,031
8	PTCL-NOS	61	4	HD-MTX	172	10,797	6,699 [†]	NE	1.4	15	2.5	544 / 76	6‡	Y	N	No abnormal uptake	Y	POM in CNS	9,649
9	EBV+ DLBCL	67	1	R-CHOP	0	28,640	>20,000	NE	3.6	10	21.7	2118 / 971	5‡	Y	N	Hepatic lesions (SUV 12.8)	N	POM	NE
10	AITL	69	4	GemE	662	6,007	11,176	Y	<0.1	13	4.6	17 / 39	5	Y	N	No abnormal uptake	Y	GI hemorrhage with M-HLH	4,237
11	PTCL-NOS	65	3	Alemtuzumab	0	19,521	>20,000	Y	24.2	25	51.7	105 / 381	6	Y	Y	No abnormal uptake	Y	Ischemic colitis with M-HLH	5,545
12	WM	71	5	Benda + Ibr	0	7,216	15,363	Y	<0.1	11	46.5	22 / 35	5	Y	Y	No abnormal uptake	Y	MODS from sepsis	NE
13	MDS-EB2	69	2	Allo-SCT	966	22,790	3,273 [‡]	Y	0.3	15	0.5	67 / 88	5	N	Y	Heterogenous uptake (SUV 4)	N	NA	14,168
14	HTLV-1+ ATLL	53	4	Clinical trial	283	10,132	>20,000	N	4.9	9	2	292 / 350	4	N	Y	No abnormal uptake	Y	MODS from sepsis	NE
15	ENKTL	19	2	SMILE	0	86,048	10,997	NE	40.3	51	8	4869 / 1890	6‡	N	N	No abnormal uptake	N	MODS with M-HLH	135,680

*No patients were evaluated for NK-cell activity which is a datum in the HLH-2004 diagnostic criteria. †Infection other than Epstein-Barr virus or cytomegalovirus. ‡Indicates patients missing ≥ 1 additional datapoint used in the HLH-2004 diagnostic criteria (excluding NK-cell activity). §83% of the WBC were secondary to malignant disease. ||Biopsy-proven hepatic involvement of malignancy. ¶First sIL2r level was measured after the start of emapalumab. EBV, Epstein-Barr virus; DLBCL, diffuse large B-cell lymphoma; MF, mycosis fungoides; PTCL-NOS, peripheral T-cell lymphoma-not otherwise specified; THRLBCL, T-cell/histiocyte-rich large B-cell lymphoma; PTLT, post-transplant (allogeneic stem cell transplant) lymphoproliferative disorder; ALK, anaplastic lymphoma kinase; ALCL, anaplastic large cell

lymphoma; PTCL-TFH, peripheral T-cell lymphoma with a follicular T-helper cell phenotype; AITL, angioimmunoblastic T-cell lymphoma; WM, Waldenstrom macroglobulinemia; MDS-EB2, myelodysplastic syndrome with excess blasts 2; HTLV-1, human T-lymphotropic virus type 1; ATLL, adult T-cell leukemia/lymphoma; ENKTL, extranodal NK/T-cell lymphoma; CEP, cyclophosphamide, etoposide, and prednisone; GemE; gemcitabine and etoposide; Tafa + Len, tafasitamab and lenalidomide; BV, brentuximab vedotin; Romi + Duve, romidepsin and duvelisib; HD-MTX, high-dose methotrexate; R-CHOP, rituximab, cyclophosphamide, vincristine, and prednisone; Benda + Ibr, bendamustine and ibrutinib; Allo-SCT, allogeneic stem cell transplant; SMILE, dexamethasone, methotrexate, ifosfamide, L-asparaginase, and etoposide; sIL2r, soluble interleukin-2 receptor alpha; BMB, bone marrow biopsy; WBC, white blood cell; Tbili, total bilirubin; AST, aspartate aminotransferase; ALT, alanine aminotransferase; OHI, optimized HLH inflammatory index; PET/CT, positron emission tomography/computed tomography scan; SUV, standard uptake value; MODS, multiple organ dysfunction syndrome; POM, progression of malignancy; CNS, central nervous system; DAH, diffuse alveolar hemorrhage; ARDS, acute respiratory distress syndrome; NE, not evaluated; NA, not applicable. Best ferritin response was considered NE in patient living ≤ 72 hours after first emapalumab dose.

