

Supplementary Table 1 (online only). Correlation between *BCL6* rearrangements and other characteristics. Except for the treatment variable, P values are always dichotomous (ie, exclude unknown/fail categories).

	All patients (n=109)			HDMTX only (n=49)		
	<i>BCL6</i> neg (n=79)	<i>BCL6</i> pos (n=30)	p	<i>BCL6</i> neg (n=35)	<i>BCL6</i> pos (n=14)	p
	N (%)	N (%)		N (%)	N (%)	
Age						
>60 years	58 (73)	19 (63)	0.349	22 (63)	6 (43)	0.222
≤60 years	21 (27)	11 (37)		13 (37)	8 (57)	
Sex						
Male	47 (60)	17 (57)	0.830	21 (60)	9 (64)	1.0
Female	32 (40)	13 (43)		14 (40)	5 (36)	
Performance status						
2-4	60 (76)	25 (83)	0.452	21 (60)	10 (71)	0.527
0-1	19 (24)	5 (17)		14 (40)	4 (29)	
Lactate dehydrogenase						
Elevated	15/56 (27)	7/23 (30)	0.786	9/34 (27)	4/14 (28)	1.0
Normal	41/56 (73)	16/23 (70)		25/34 (73)	10/15 (71)	
Ocular involvement						
Yes	4 (5)	1 (3)	1.0	4 (11)	1 (7)	1.0
No	75 (95)	29 (97)		31 (89)	13 (93)	
Deep CNS lesions						
Yes	47/78 (60)	17/28 (64)	1.0	22/34 (65)	8/14 (57)	0.746
No	31/78 (40)	11/28 (39)		12/34 (35)	6/14 (43)	
Number of CNS lesions						
0-1	45/78 (58)	18/28 (64)	0.655	16/34 (47)	10/14 (57)	0.202
≥2	33/78 (42)	10/28 (46)		18/34 (53)	4/14 (29)	
Largest mass						
≥4 cm	46/76 (61)	15/28 (54)	0.654	24/34 (71)	8/14 (57)	0.503
<4 cm	30/76 (39)	10/28 (46)		10/34 (29)	6/14 (43)	
Treatment						
HDMTX-based	35 (44)	14 (47)	0.948	∕∕	∕∕	∕∕
Radiation alone	29 (37)	10 (33)				
Frail/best supportive care	15 (19)	6 (20)				
Chemotherapy regimen						
MIDVAP	∕∕	∕∕	∕∕	8 (23)	2 (14)	0.702
HDMTX				27 (71)	12 (86)	
Rituximab						
Yes	∕∕	∕∕	∕∕	7 (20)	3 (21)	1.0
No				28 (80)	11 (79)	

Radiation Yes No	/// ///	/// ///	/// ///	13 (37) 22 (63)	3 (21) 11 (79)	0.336
CD10 IHC Positive Negative	4/74 (5) 70/74 (95)	0 30 (100)	0.322	1/33 (3) 32/33 (97)	0 14/14 (100)	1.0
BCL6 IHC Positive Negative	56/73 (77) 17/73 (23)	27/29 (93) 2/29 (7)	0.088	22/33 (67) 11/33 (33)	12/13 (92) 1/13 (8)	0.135
MUM1 IHC Positive Negative	22/73 (30) 51/73 (70)	10/30 (33) 20/30 (67)	0.816	11/33 (33) 22/33 (67)	3/14 (21) 11/14 (79)	0.503
FOXP1 IHC Positive Negative	58/76 (76) 18/76 (24)	24/30 (80) 6/30 (20)	0.800	24/34 (71) 10/34 (29)	10/14 (71) 4/14 (29)	1.0
LMO2 IHC Positive Negative	18/73 (25) 55/73 (75)	16/28 (57) 12/28 (43)	0.004	6/33 (18) 27/33 (82)	8/12 (67) 4/12 (33)	0.004
COO Hans algorithm GCB Non-GCB	17/73 (23) 56/73 (77)	9/30 (30) 21/30 (70)	0.467	27/33 (82) 6/33 (18)	6/14 (43) 8/14 (57)	0.140
COO Choi algorithm GCB ABC	11/73 (15) 62/73 (85)	5/30 (17) 25/30 (83)	1.0	5/33 (15) 28/33 (85)	4/14 (29) 10/14 (71)	0.419
COO Tally algorithm GCB ABC	2/74 (3) 72/74 (97)	0 30/30 (100)	1.0	0 33/33 (100)	0 14/14 (100)	1.0
MYC IHC Positive Negative	25/64 (39) 39/64 (61)	11/25 (44) 14/25 (56)	0.811	12/25 (48) 13/25 (52)	4/11 (36) 7/11 (64)	0.718
BCL2 IHC (124 antibody) Positive Negative	44/63 (70) 19/63 (30)	22/24 (92) 2/24 (8)	0.048	20/26 (77) 6/26 (23)	10/11 (91) 1/11 (9)	0.649
BCL2 IHC (E17 antibody) Positive Negative	55/75 (73) 20/75 (27)	27/30 (90) 3/30 (10)	0.072	25/33 (76) 8/33 (24)	13/14 (93) 1/14 (7)	0.244
Dual MYC + BCL2 (124) Positive Negative	18/60 (30) 42/60 (70)	11/24 (46) 13/24 (54)	0.207	9/24 (38) 15/24 (62)	4/11 (36) 7/11 (64)	1.0
Dual MYC + BCL2 (E17) Positive Negative	21/63 (33) 42/53 (67)	10/25 (40) 15/25 (60)	0.624	10/25 (40) 15/25 (60)	3/11 (27) 8/11 (73)	0.708

PD-L1/2 IHC Positive Negative	20/73 (27) 53/73 (73)	9/29 (31) 20/29 (69)	0.809	10/31 (32) 21/31 (68)	2/13 (15) 11/13 (85)	0.459
HLA D-PQR IHC Positive cytoplasmic Positive membranous Negative	37/77 (48) 17/77 (22) 23/77 (30)	11/29 (38) 5/29 (17) 13/29 (45)	0.350	19/35 (54) 6/35 (17) 10/35 (29)	6/13 (46) 2/13 (15) 5/13 (39)	0.805
EBER IHC Positive Negative	6/75 (8) 69/75 (92)	0 28/28 (100)	0.186	3/33 (9) 30/33 (91)	0 12/12 (100)	0.553
<i>CIITA</i> rearrangement FISH Positive Negative	3/73 (4) 70/73 (96)	0 28/28 (100)	0.558	1/32 (3) 31/32 (97)	0 12/12 (100)	1.0
<i>PDL 1-2</i> rearrangement Positive Negative	1/70 (1) 69/70 (99)	0 29/29 (100)	1.0	1/31 (3) 30/31 (97)	0 13/13 (100)	1.0
<i>MYC</i> rearrangement FISH Positive Negative	1/76 (1) 1/76 (99)	1/28 (4) 27/28 (96)	0.468	0 34/34 (100)	1/13 (8) 12/13 (92)	0.277
<i>BCL2</i> rearrangement FISH Positive Negative	0 77/77 (100)	1/30 (3) 29/30 (97)	0.280	0 35/35 (100)	0 14/14 (100)	NA
<i>BCL6</i> copy number FISH Gain Amp/del/normal	10/79 (13) 69/79 (87)	5/30 (17) 25/30 (83)	0.551	4/35 (11) 31/35 (89)	2/14 (14) 12/14 (86)	1.0

Supplementary Table 2 (online only). Univariate analyses in the entire cohort and HDMTX subgroup.

Except for the treatment variable, P values are always dichotomous (ie, exclude unknown/fail categories), and use the lower category as the reference. Survival analysis was not performed when n≤5 in any subgroup (see Table 1). NA: not appropriate. Bolded results (p<0.10) were included in the multivariate analyses.

Characteristic	Entire cohort (n=115)				HDMTX subgroup (n=52)			
	PFS		OS		PFS		OS	
	HR (95% CI)	p	HR (95% CI)	p	HR (95% CI)	p	HR (95% CI)	p
Age >60 years	1.32 (0.87-2.01)	0.180	1.78 (1.13-2.81)	0.013	1.55 (0.64-2.09)	0.633	1.18 (0.60-2.30)	0.634
Male	0.93 (0.62-1.38)	0.711	1.26 (0.82-1.93)	0.289	1.13 (0.59-2.18)	0.710	2.52 (1.15-5.49)	0.020
Performance status >1	1.39 (0.87-2.24)	0.168	2.27 (1.35-3.84)	0.002	1.06 (0.56-1.98)	0.866	1.77 (0.87-3.59)	0.114
Elevated LDH	1.64 (0.99-2.69)	0.052	1.44 (0.86-2.42)	0.162	1.77 (0.92-3.41)	0.080	1.39 (0.69-2.78)	0.355
Deep brain lesions	1.10 (0.74-1.63)	0.649	1.12 (0.74-1.69)	0.593	0.91 (0.52-1.80)	0.910	1.12 (0.56-2.26)	0.746
≥2 brain lesions	0.77 (0.52-1.14)	0.194	0.90 (0.60-1.35)	0.601	1.27 (0.69-2.36)	0.440	1.11 (0.57-2.16)	0.762
Largest mass ≥4 cm	1.24 (0.83-1.85)	0.286	1.22 (0.81-1.83)	0.351	1.0 (0.54-1.84)	0.989	1.29 (0.65-2.54)	0.463
Treatment HDMTX-based Radiation alone Frail/BSC	0.09 (0.05-0.18) 0.16 (0.09-0.30) Ref	<0.001	0.06 (0.03-0.12) 0.18 (0.10-0.32) Ref	<0.001	///	///	///	///
MIDVAP regimen (vs. HDMTX)	///	///	///	///	1.06 (0.53-2.10)	0.875	1.57 (0.75-3.28)	0.230
Rituximab	///	///	///	///	0.81 (0.36-1.83)	0.612	0.63 (0.24-1.64)	0.344
Radiation	///	///	///	///	1.43 (1.75-2.71)	0.275	1.20 (0.61-2.37)	0.598
MUM1 IHC positive	1.05 (0.69-1.61)	0.816	1.22 (0.79-1.90)	0.373	1.06 (0.54-2.07)	0.872	1.28 (0.62-2.67)	0.508
BCL6 IHC positive	1.46 (0.88-2.41)	0.143	1.44 (0.85-2.45)	0.173	1.33 (0.66-2.67)	0.413	1.27 (0.59-2.71)	0.543
FOXP1 IHC positive	1.31 (0.82-2.11)	0.260	1.48 (0.91-2.41)	0.116	1.35 (0.68-2.71)	0.391	1.58 (0.76-3.28)	0.223

LMO2 IHC positive	1.19 (0.78-1.82)	0.427	1.25 (0.80-1.94)	0.325	1.44 (0.73-2.83)	0.298	1.91 (0.93-3.95)	0.080
Non-GCB COO (Hans)	0.97 (0.61-1.53)	0.891	0.83 (0.52-1.34)	0.831	1.49 (0.74-3.01)	0.263	1.01 (0.47-2.16)	0.976
Non-GCB COO (Choi)	0.72 (0.40-1.30)	0.275	0.62 (0.34-1.14)	0.123	0.98 (0.43-2.24)	0.964	0.71 (0.29-1.72)	0.441
MYC IHC positive	0.91 (0.59-1.41)	0.674	0.94 (0.59-1.46)	0.771	1.06 (0.52-2.20)	0.863	1.14 (0.53-2.45)	0.736
BCL2 IHC positive (124 stain)	1.32 (0.79-2.20)	0.298	1.03 (0.62-1.72)	0.916	1.84 (0.70-4.80)	0.215	1.21 (0.46-3.22)	0.698
BCL2 IHC positive (E17 stain)	1.39 (0.85-2.28)	0.188	1.03 (0.63-1.67)	0.913	1.93 (0.85-4.35)	0.114	1.07 (0.47-2.46)	0.867
Dual MYC + BCL2 (124 stain)	1.0 (0.63-1.59)	0.997	0.98 (0.61-1.58)	0.947	1.24 (0.58-2.62)	0.578	1.17 (0.53-2.59)	0.694
Dual MYC + BCL2 (E17 stain)	1.02 (0.65-1.60)	0.925	1.01 (0.64-1.60)	0.963	1.21 (0.57-2.54)	0.619	1.16 (0.53-2.53)	0.717
PD-L1/2 IHC positive	1.41 (0.91-2.19)	0.125	1.30 (0.83-2.04)	0.248	1.33 (0.66-2.70)	0.430	1.33 (0.63-2.79)	0.455
HLA-DP IHC positive	1.10 (0.73-1.66)	0.648	1.02 (0.67-1.56)	0.932	1.39 (0.72-2.69)	0.322	1.33 (0.64-2.77)	0.441
EBER ISH positive	0.98 (0.43-2.24)	0.958	1.47 (0.64-3.39)	0.366	NA		NA	
<i>BCL6</i> FISH positive	1.68 (1.08-2.60)	0.021	1.28 (0.81-2.01)	0.286	2.46 (1.26-4.84)	0.009	1.65 (0.81-3.36)	0.167