

Supplementary Table S1. Definitions of levels of stage, site, type, age, and sex for lymphoma.

<i>Prognostic Factors</i>	<i>Levels</i>	<i>Definitions</i>
<i>Ann Arbor Stage^a</i>	<i>I</i>	<i>Involvement of a single lymphatic site (i.e., nodal region, Waldeyer's ring, thymus or spleen) (I); or localized involvement of a single extralymphatic organ or site in the absence of any lymph node involvement (IE) (rare in Hodgkin lymphoma).</i>
	<i>II</i>	<i>Involvement of two or more lymph node regions on the same side of the diaphragm (II); or localized involvement of a single extralymphatic organ or site in association with regional lymph node involvement with or without involvement of other lymph node regions on the same side of the diaphragm (IIE). The number of regions involved may be indicated by an arabic numeral, as in, for example, II3.</i>
	<i>III</i>	<i>Involvement of lymph node regions on both sides of the diaphragm (III), which also maybe accompanied by extralymphatic extension in association with adjacent lymph node involvement (IIIE) or by involvement of the spleen (IIIS) or both (IIIE,S). Splenic involvement is designated by the letter S.</i>
	<i>IV</i>	<i>Diffuse or disseminated involvement of one or more extralymphatic organs, with or without associated lymph node involvement; or isolated extralymphatic organ involvement in the absence of adjacent regional lymph node involvement, but in conjunction with disease in distant site(s). Stage IV includes any involvement of the liver or bone marrow, lungs (other than by direct extension from another site), or cerebrospinal fluid.</i>
<i>Site^b</i>	<i>N</i>	<i>Nodal</i>
	<i>EN</i>	<i>Extranodal</i>
<i>Type^b</i>	<i>HL</i>	<i>Hodgkin lymphoma</i>
	<i>NHL</i>	<i>Non-Hodgkin lymphoma</i>
<i>Age (A)</i>	<i>Y</i>	<i>Age < 60</i>
	<i>O</i>	<i>Age ≥ 60</i>
<i>Sex (S)</i>	<i>F</i>	<i>Female</i>
	<i>M</i>	<i>Male</i>

^aEdge SB, Byrd DR, Compton CC, Fritz AG, Greene FL, Trotti A. AJCC Cancer Staging Manual, 7th edn. New York: Springer-Verlag. 2010.

^bSite Recode ICD-O-3/WHO 2008 Definition. Available online at:
https://seer.cancer.gov/siterecode/icdo3_dwho/home/index.html

Supplementary Table S2. EACCD grouping of lymphoma patients according to stage, site, type, age, and sex.

<i>Stage</i>	<i>Site</i>	<i>Type</i>	<i>Age</i>	<i>Sex</i>
Group 1				
IA	EN	NHL	Y	F
IA	EN	NHL	Y	M
IA	N	HL	Y	F
IA	N	HL	Y	M
IA	N	NHL	Y	F
IB	EN	NHL	Y	M
IB	N	HL	Y	F
IEA	EN	HL	Y	F
IEA	EN	HL	Y	M
IEA	N	NHL	Y	M
IIA	N	HL	Y	F
IIA	N	HL	Y	M
IIB	N	HL	Y	F
IIB	N	HL	Y	M
IIEA	EN	HL	Y	F
IIEA	EN	HL	Y	M
IIEA	N	HL	Y	F
IIEA	N	HL	Y	M
IIEB	N	HL	Y	F
IIIA	N	HL	Y	F
IIISA	N	HL	Y	F
ISA	N	NHL	Y	F
IVA	N	HL	Y	F
Group 2				
IA	EN	NHL	O	F
IA	EN	NHL	O	M
IA	N	NHL	Y	M
IB	EN	NHL	Y	F
IB	N	HL	Y	M
IEA	EN	NHL	Y	F
IIA	N	NHL	Y	F
IIA	N	NHL	Y	M
IIEA	EN	NHL	Y	F
IIEA	N	NHL	Y	F
IIEB	EN	HL	Y	M
IIEB	N	HL	Y	M
IIIA	EN	NHL	Y	F
IIIA	N	HL	Y	M
IIIB	N	HL	Y	F

IIIEB	N	HL	Y	M
IIIESB	N	HL	Y	F
IIIESB	N	HL	Y	M
IIISA	N	HL	Y	M
IIISB	N	HL	Y	M
IISB	N	NHL	Y	F
Group 3				
IB	EN	NHL	O	F
IB	EN	NHL	O	M
IB	N	NHL	Y	F
IB	N	NHL	Y	M
IEA	EN	NHL	Y	M
IEB	EN	NHL	Y	F
IIA	EN	NHL	Y	F
IIA	EN	NHL	Y	M
IIB	EN	NHL	Y	F
IIB	EN	NHL	Y	M
IIB	N	NHL	Y	F
IIEA	EN	NHL	Y	M
IIEA	N	NHL	Y	M
IIEB	EN	NHL	Y	F
IIIA	N	NHL	Y	F
IIIA	N	NHL	Y	M
IIIB	N	HL	Y	M
IIIEA	EN	NHL	Y	F
IIIEA	N	HL	Y	M
IIIESA	N	NHL	Y	F
IIISB	N	HL	Y	F
IISA	N	NHL	Y	F
ISA	N	NHL	O	M
ISA	N	NHL	Y	M
ISB	N	NHL	Y	F
IVA	N	HL	Y	M
IVB	N	HL	Y	F
Group 4				
IA	N	HL	O	F
IA	N	HL	O	M
IA	N	NHL	O	F
IA	N	NHL	O	M
IEA	N	NHL	O	F
IIA	N	HL	O	M
IIB	N	NHL	Y	M
IIEB	N	NHL	Y	F

IIEB	N	NHL	Y	M
IIESA	EN	NHL	Y	M
IIIB	N	NHL	Y	F
IIIEA	N	HL	Y	F
IIIEA	N	NHL	Y	F
IIIEA	N	NHL	Y	M
IIIEB	N	HL	Y	F
IIISA	N	NHL	Y	F
IIISB	N	NHL	Y	F
IISA	N	NHL	Y	M
IISB	N	NHL	Y	M
ISA	N	NHL	O	F
IVA	EN	NHL	Y	F
IVA	N	NHL	Y	F
IVB	N	HL	Y	M
Group 5				
IEA	EN	NHL	O	F
IEA	EN	NHL	O	M
IEA	N	NHL	O	M
IEB	EN	NHL	Y	M
IIA	EN	NHL	O	M
IIA	N	HL	O	F
IIA	N	NHL	O	F
IIA	N	NHL	O	M
IIB	EN	NHL	O	M
IIEB	EN	NHL	Y	M
IIESA	N	NHL	O	M
IIIA	EN	NHL	Y	M
IIIB	EN	NHL	Y	M
IIIB	N	NHL	Y	M
IIIEA	EN	NHL	Y	M
IIIEB	EN	NHL	Y	F
IIIEB	EN	NHL	Y	M
IIIEB	N	NHL	Y	F
IIISA	N	NHL	Y	M
ISB	N	NHL	O	F
ISB	N	NHL	Y	M
IVA	EN	NHL	Y	M
IVA	N	NHL	Y	M
IVB	EN	HL	Y	M
IVB	EN	NHL	Y	F
Group 6				
IB	N	HL	O	F

IB	N	HL	O	M
IB	N	NHL	O	F
IEB	EN	NHL	O	F
IIA	EN	NHL	O	F
IIB	EN	NHL	O	F
IIEA	EN	NHL	O	F
IIEA	EN	NHL	O	M
IIEA	N	NHL	O	F
IIEA	N	NHL	O	M
IIESA	EN	NHL	O	F
IIIA	EN	NHL	O	F
IIIA	EN	NHL	O	M
IIIA	N	HL	O	M
IIIA	N	NHL	O	F
IIIA	N	NHL	O	M
IIIB	EN	NHL	O	F
IIIEA	N	NHL	O	F
IIIEA	N	NHL	O	M
IIIEB	N	NHL	Y	M
IIIESA	EN	NHL	O	M
IIIESB	N	NHL	Y	M
IIISA	N	HL	O	F
IIISB	N	NHL	Y	M
IISA	N	NHL	O	F
ISB	N	NHL	O	M
IVB	N	NHL	Y	F
Group 7				
IB	N	NHL	O	M
IEB	EN	NHL	O	M
IIB	N	HL	O	F
IIB	N	HL	O	M
IIB	N	NHL	O	F
IIB	N	NHL	O	M
IIEB	EN	NHL	O	F
IIESB	N	NHL	Y	M
IIIA	N	HL	O	F
IIIB	N	HL	O	F
IIIB	N	NHL	O	F
IIIEA	EN	NHL	O	F
IIIEA	EN	NHL	O	M
IIIESA	N	NHL	O	M
IIIESA	N	NHL	Y	M
IIIESB	N	NHL	O	F

IIISA	N	NHL	O	F
IIISA	N	NHL	O	M
IIISB	N	HL	O	M
IISA	N	NHL	O	M
IISB	N	NHL	O	M
IVA	EN	NHL	O	F
IVA	EN	NHL	O	M
IVA	N	NHL	O	F
IVA	N	NHL	O	M
IVB	EN	NHL	Y	M
IVB	N	NHL	Y	M
Group 8				
IIEB	EN	NHL	O	M
IIEB	N	NHL	O	F
IIEB	N	NHL	O	M
IIESA	N	NHL	O	F
IIESB	EN	NHL	O	M
IIESB	N	NHL	O	F
IIESB	N	NHL	O	M
IIIB	EN	NHL	O	M
IIIB	N	HL	O	M
IIIB	N	NHL	O	M
IIIEB	EN	NHL	O	F
IIIEB	EN	NHL	O	M
IIIEB	N	NHL	O	F
IIIEB	N	NHL	O	M
IIIESA	EN	NHL	O	F
IIIESA	N	NHL	O	F
IIIESB	N	NHL	O	M
IIISA	N	HL	O	M
IIISB	N	HL	O	F
IIISB	N	NHL	O	F
IIISB	N	NHL	O	M
IISB	N	NHL	O	F
IVA	N	HL	O	F
IVA	N	HL	O	M
IVB	EN	NHL	O	F
IVB	EN	NHL	O	M
IVB	N	HL	O	F
IVB	N	HL	O	M
IVB	N	NHL	O	F
IVB	N	NHL	O	M

Supplementary Table S3. Output of the Cox proportional hazards regression model and the logrank test for EACCD grouping on the basis of stage, site, type, age, and sex on the training set. The p-value for the hazard ratio is from the Wald test testing the null hypothesis that the hazard ratio equals 1. The p-value for the logrank test is from the logrank test testing the null hypothesis that two survival curves are equal.

	Training Set			Validation Set		
Groups Compared	Hazard Ratio (95% CI)	P-value for Hazard Ratio	P-value for Logrank Test	Hazard Ratio (95% CI)	P-value for Hazard Ratio	P-value for Logrank Test
2 vs 1	2.45 (2.23,2.70)	2.0×10^{-75}	1.9×10^{-80}	1.82 (1.26,2.64)	0.0015	0.0013
3 vs 2	1.55 (1.45,1.66)	1.5×10^{-35}	4.5×10^{-36}	1.81 (1.38,2.38)	1.8×10^{-5}	1.3×10^{-5}
4 vs 3	1.54 (1.46,1.63)	1.5×10^{-55}	2.1×10^{-56}	1.56 (1.28,1.90)	1.2×10^{-5}	9.8×10^{-6}
5 vs 4	1.31 (1.26,1.36)	2.6×10^{-38}	1.9×10^{-38}	1.47 (1.28,1.70)	6.3×10^{-8}	5.3×10^{-8}
6 vs 5	1.32 (1.27,1.36)	3.8×10^{-52}	1.7×10^{-52}	1.19 (1.06,1.34)	0.0039	0.0039
7 vs 6	1.31 (1.27,1.36)	6.8×10^{-64}	5.3×10^{-64}	1.48 (1.34,1.54)	1.0×10^{-13}	7.7×10^{-14}
8 vs 7	1.47 (1.43,1.51)	1.8×10^{-153}	1.3×10^{-154}	1.42 (1.30,1.55)	1.9×10^{-14}	1.5×10^{-14}

Supplementary Table S4. Contingency table between EACCD groups and Ann Arbor principal stages.

Ann Arbor \ EACCD	1	2	3	4	5	6	7	8	Total
I	4,828	6,238	4,685	7,446	10,953	1,335	1,280	0	36,765
II	6,476	3,769	2,186	1,383	5,438	4,075	2,190	959	26,476
III	542	1,509	4,221	1,355	1,750	8,131	3,298	3,295	24,101
IV	368	0	1,017	4,506	5,257	1,672	22,070	9,493	44,383
Total	12,214	11,516	12,109	14,690	23,398	15,213	28,838	13,747	131,725

Supplementary Table S5. Contingency table between EACCD groups and Ann Arbor substages.

Ann Arbor \ EACCD	1	2	3	4	5	6	7	8	Total
IA	4,331	3,208	0	7,205	0	0	0	0	14,744
IB	347	399	1,067	0	0	652	532	0	2,997
IEA	97	2,631	3,054	45	10,263	0	0	0	16,090
IEB	0	0	328	0	584	616	748	0	2,276
ISA	53	0	208	196	0	0	0	0	457
ISB	0	0	28	0	106	67	0	0	201
IIA	3,902	2,698	140	288	4,938	88	0	0	12,054
IIB	2,205	0	603	598	99	58	1,562	0	5,125
IIEA	278	897	1,219	0	0	3,748	0	0	6,142
IEEB	91	131	176	315	364	0	302	749	2,128
IISA	0	0	48	78	0	150	177	0	453
IISB	0	43	0	74	0	0	124	92	333
IIESA	0	0	0	30	37	31	0	35	133
IIESB	0	0	0	0	0	0	25	83	108
IIIA	400	561	3,250	0	70	6,800	194	0	11,275
IIIB	0	370	658	631	1,047	43	1,432	1,817	5,998
IIIEA	0	0	137	401	162	717	555	0	1,972
IIIEB	0	38	0	32	230	146	0	564	1,010
IIISA	142	160	0	152	241	39	856	44	1,634
IIISB	0	321	141	139	0	295	71	700	1,667
IIIESA	0	0	35	0	0	34	128	102	299
IIIESB	0	59	0	0	0	57	62	68	246
IVA	368	0	437	3,308	4,913	0	17,929	354	27,309
IVB	0	0	580	1,198	344	1,672	4,141	9,139	17,074
Total	12,214	11,516	12,109	14,690	23,398	15,213	28,838	13,747	131,725