

**Primary renal lymphoma: a population-based study in the United States,
1980-2013**

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Supplementary materials

Supplementary materials legends

Supplementary Figure 1. Kaplan–Meier estimate of relative survival (RS) and disease-specific survival (DSS) of patients with primary renal lymphoma (PRL) by different clinical factors.

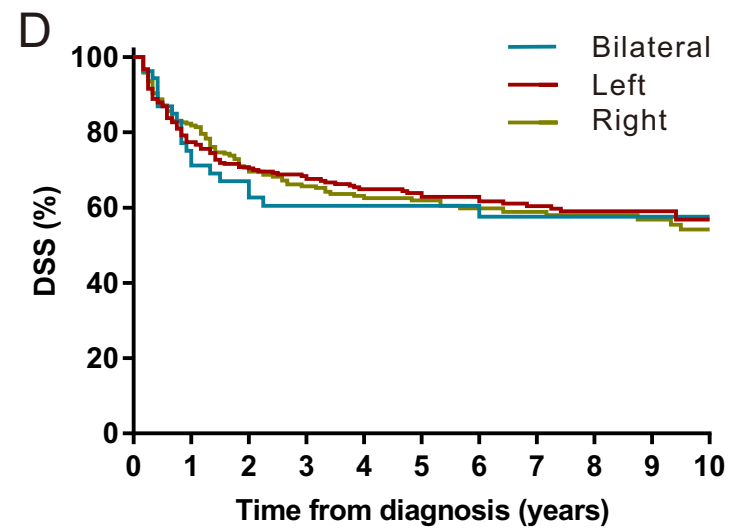
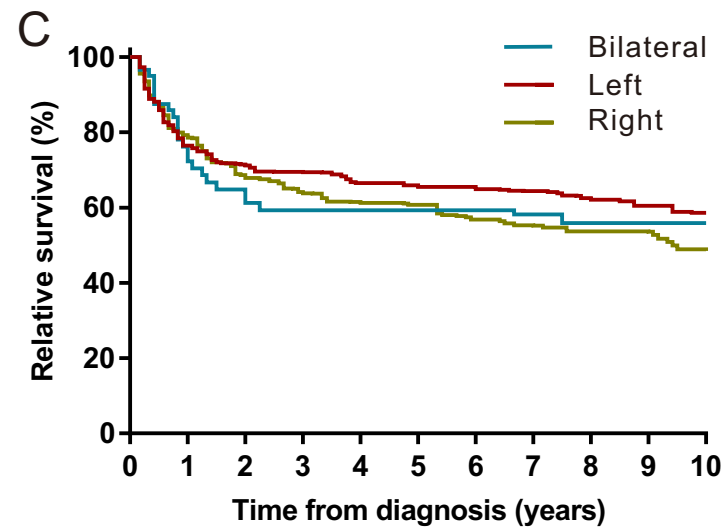
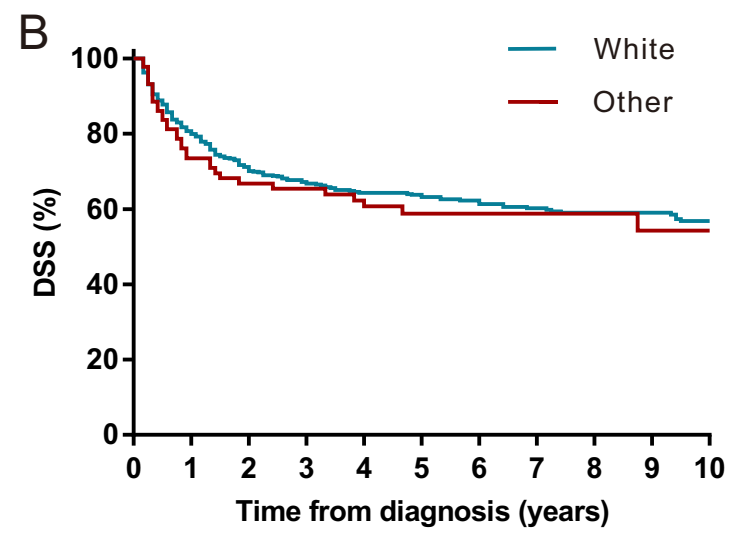
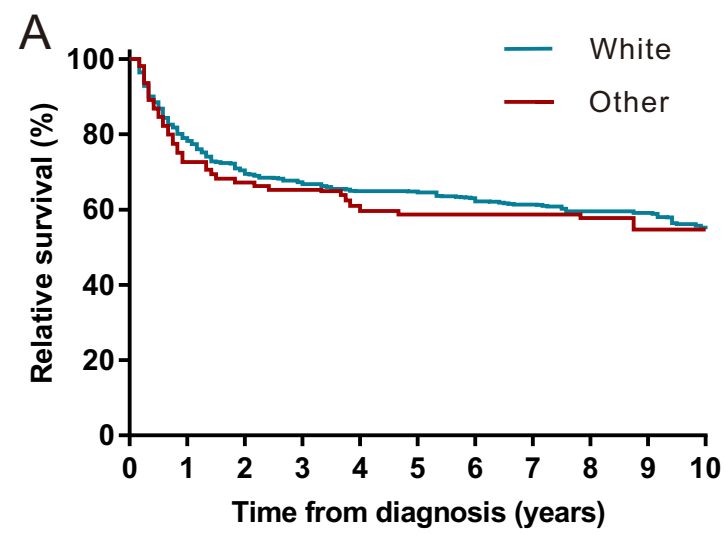
Supplementary Figure 2. Kaplan–Meier estimate of relative survival (RS) and disease-specific survival (DSS) of patients with primary renal diffuse large B-cell lymphoma (DLBCL) vs. primary nodal DLBCL.

Supplementary Table 1. Vital status and Causes of death in patients with primary renal lymphoma (PRL)

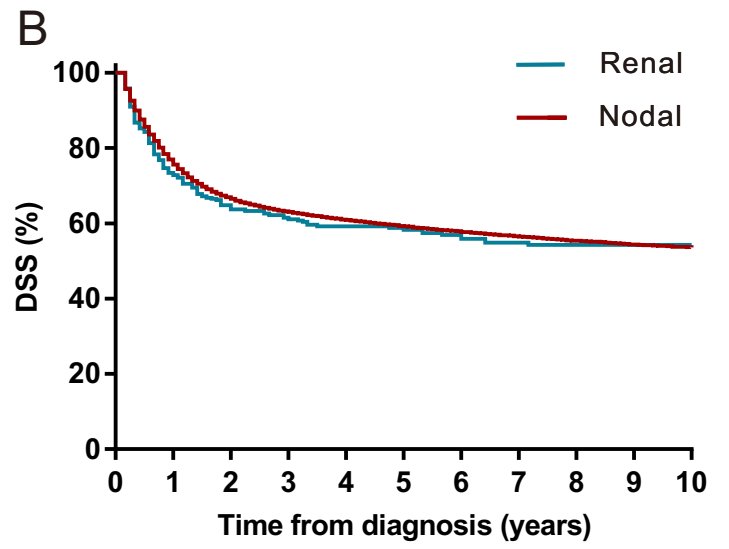
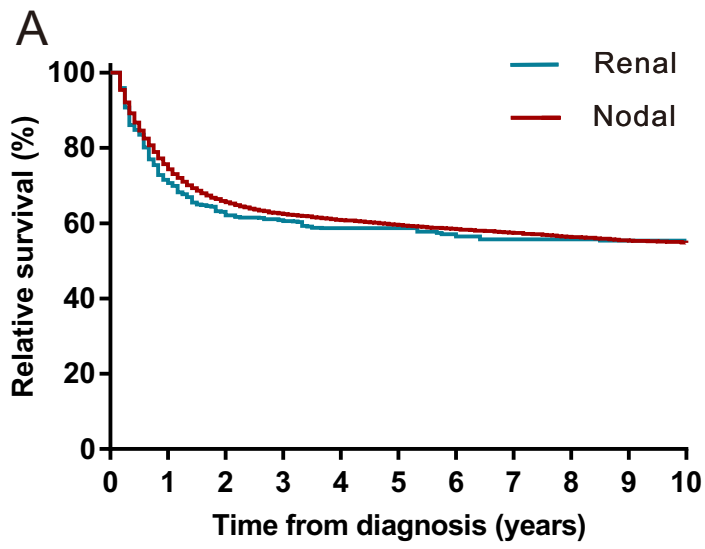
Supplementary Table 2. Laterality of primary renal lymphoma (PRL) in patients younger than 18 vs. patients aging at 18 or older

Supplementary Table 3. Demographic characteristics and incidence rates of patients with primary renal lymphoma (PRL) by different sex in SEER-9 database

Supplementary Table 4. Annual incidence rate of primary renal lymphoma (PRL) in SEER-9 database



Supplementary Figure 1. Kaplan–Meier estimate of relative survival (RS) and disease-specific survival (DSS) of patients with PRL by different clinical factors. (A) RS by race; (B) DSS by race; (C) RS by laterality; (D) DSS by laterality.



Supplementary Figure 2. Kaplan–Meier estimate of relative survival (RS) and disease-specific survival (DSS) of patients with primary renal diffuse large B-cell lymphoma (DLBCL) vs. primary nodal DLBCL. (A) RS; (B) DSS.

Supplementary Table 1. Vital status and Causes of death in patients with PRL.

Cause of death	No. (%)
All death	423 (100%)
PRL	253 (59.8%)
Cardiovascular diseases	46 (10.9%)
Other malignant cancers	45 (10.6%)
Infectious diseases	32 (7.6%)
Renal diseases	7 (1.7%)
Alzheimer's disease (ICD-9 and 10 only)	4 (0.9%)
Diabetes mellitus	4 (0.9%)
Accidents and adverse effects	4 (0.9%)
Chronic obstructive pulmonary disease	3 (0.7%)
Chronic liver disease and cirrhosis	1 (0.2%)
Symptoms, signs and ill-defined conditions	2 (0.5%)
Other cause of death	19 (4.5%)
Unknown	3 (0.7%)

Supplementary Table 2. Laterality of PRL in patients younger than 18 vs. patients aging at 18 or older

Characteristics	No. of patients		<i>p</i> ^a
	<18	≥18	%
Laterality			< 0.001
Bilateral	9 (39.1%)	48 (6.9%)	
Single	12 (52.2%)	620 (88.6%)	
Unknown or N/A	2 (8.7%)	32 (4.6%)	

N/A, not applicable.

^aThe chi-square test was used.

Supplementary Table 3. Demographic characteristics and incidence rates of patients with PRL by different sex in SEER-9 database

Characteristics	Demographic characteristics			Incidence rates		
	No. of patients	No. of Population	p^a	Age-Adjusted Rate	Standard Error	95% CI
All patients	436 (100%)	8.70E+08 (100%)		0.0528	0.0025	0.048-0.058
Sex			< 0.001			
Male	273 (62.6%)	4.27E+08 (49.1%)		0.0776	0.0048	0.069-0.088
Female	163 (37.4%)	4.43E+08 (50.9%)		0.0352	0.0028	0.030-0.041

^aThe chi-square test was used.

Supplementary Table 4. Annual incidence rate of PRL in SEER-9 database

Year	Overall incidence			Male incidence			Female incidence		
	Incidence rate ^a	SE	95% CI	Incidence rate ^a	SE	95% CI	Incidence rate ^a	SE	95% CI
1980	0.0201	0.0101	0.0054-0.052	0.0316	0.0183	0.0065-0.0958	0.0096	0.0096	0.0002-0.0535
1981	0.0127	0.0073	0.0026-0.0391	0.0267	0.0154	0.0055-0.0851	0.0001 ^b	0.0001	0-0.0353
1982	0.0148	0.0086	0.003-0.0435	0.0219	0.0156	0.0026-0.0812	0.0091	0.0091	0.0002-0.0516
1983	0.0152	0.0088	0.0031-0.0444	0.0191	0.0135	0.0023-0.074	0.0099	0.0099	0.0002-0.0534
1984	0.0275	0.0113	0.01-0.0607	0.0181	0.0128	0.0022-0.0711	0.0337	0.0169	0.0091-0.088
1985	0.0295	0.0123	0.0105-0.0646	0.0228	0.0161	0.0028-0.0818	0.0368	0.019	0.0095-0.0953
1986	0.0304	0.0117	0.0119-0.0639	0.0533	0.0271	0.0141-0.1328	0.0158	0.0112	0.0019-0.0596
1987	0.0366	0.0131	0.0156-0.0728	0.0382	0.0194	0.0102-0.101	0.0331	0.0166	0.009-0.0859
1988	0.0268	0.012	0.0087-0.0613	0.0328	0.0241	0.0035-0.1081	0.0255	0.0148	0.0053-0.075
1989	0.0398	0.0135	0.0179-0.0763	0.0323	0.0165	0.0085-0.0884	0.0400	0.018	0.0128-0.0946
1990	0.0433	0.0146	0.0195-0.0819	0.0964	0.0327	0.0434-0.1833	0.0001 ^b	0.0001	0-0.031
1991	0.0501	0.0152	0.0248-0.0896	0.0850	0.0335	0.0325-0.1746	0.0304	0.0152	0.0083-0.0793
1992	0.0351	0.0125	0.015-0.0692	0.037	0.0188	0.0098-0.0963	0.0338	0.017	0.0091-0.0861
1993	0.0431	0.0137	0.0206-0.0792	0.0764	0.0273	0.0326-0.151	0.0153	0.0108	0.0019-0.0561
1994	0.0593	0.016	0.0323-0.0996	0.0938	0.0302	0.0443-0.1734	0.0285	0.0143	0.0078-0.0745
1995	0.0505	0.0146	0.026-0.088	0.0537	0.022	0.0197-0.1171	0.0495	0.0203	0.0181-0.107
1996	0.0164	0.0082	0.0045-0.0419	0.0242	0.0178	0.0026-0.082	0.0145	0.0102	0.0018-0.0533
1997	0.0499	0.0144	0.0257-0.0868	0.0821	0.0276	0.0373-0.1556	0.0215	0.0125	0.0044-0.0638
1998	0.0688	0.0167	0.0401-0.1099	0.1120	0.0329	0.0572-0.1956	0.0353	0.0158	0.0114-0.0831
1999	0.0795	0.0178	0.0485-0.1227	0.1011	0.0294	0.0519-0.177	0.0561	0.0200	0.024-0.1115
2000	0.0500	0.0139	0.0266-0.0854	0.0745	0.0251	0.0337-0.142	0.0305	0.0152	0.0083-0.0774
2001	0.0699	0.0165	0.0414-0.1104	0.0974	0.0299	0.0479-0.1743	0.0513	0.0194	0.0206-0.1055
2002	0.0616	0.0155	0.0351-0.1	0.0741	0.0249	0.0336-0.1409	0.0507	0.0192	0.0203-0.1044
2003	0.0766	0.0172	0.0467-0.1184	0.1101	0.0319	0.0567-0.1908	0.0547	0.0194	0.0236-0.1084
2004	0.0558	0.0145	0.0311-0.0921	0.0800	0.0271	0.0361-0.1512	0.041	0.0167	0.015-0.0897
2005	0.0605	0.0152	0.0344-0.0982	0.0971	0.0295	0.0482-0.1725	0.0329	0.0148	0.0106-0.078
2006	0.0772	0.0166	0.0481-0.1173	0.1118	0.0316	0.0587-0.1911	0.0571	0.0191	0.026-0.1097

Continued

Year	Overall incidence			Male incidence			Female incidence		
	Incidence rate ^a	SE	95% CI	Incidence rate ^a	SE	95% CI	Incidence rate ^a	SE	95% CI
2007	0.0631	0.0151	0.0371-0.1004	0.0926	0.0274	0.047-0.163	0.0379	0.0158	0.0135-0.0845
2008	0.0802	0.0173	0.0499-0.1218	0.0730	0.0249	0.0327-0.139	0.0876	0.0245	0.0464-0.1504
2009	0.0803	0.0166	0.0511-0.1202	0.1489	0.0349	0.0886-0.2335	0.0253	0.0114	0.0081-0.0629
2010	0.0896	0.0178	0.0583-0.1318	0.1598	0.0378	0.0945-0.2508	0.0447	0.0159	0.0192-0.0905
2011	0.0586	0.0141	0.0344-0.0935	0.0865	0.0265	0.0426-0.1547	0.0399	0.0153	0.0157-0.0846
2012	0.0473	0.0124	0.0262-0.0788	0.0572	0.0204	0.0244-0.1132	0.0438	0.0169	0.0172-0.0918
2013	0.0656	0.0142	0.0408-0.1003	0.1008	0.0275	0.0543-0.1702	0.0398	0.0142	0.0170-0.0818

SE, standard error; NR, not reached.

^aIncidence rates were age-adjusted to the 2000 US standard population and expressed per 100,000 person-years.

^bThe values equal to zero when there were no cases reported were modified to a small positive constant (e. g. 0.0001), according to the statistical transformation.

Supplementary Table 5. Annual mortality rate of PRL in SEER-9 database

Year	Overall mortality rate			Male mortality rate			Female mortality rate		
	Incidence rate ^a	SE	95% CI	Incidence rate ^a	SE	95% CI	Incidence rate ^a	SE	95% CI
1980	0.0257	0.0115	0.0083-0.0601	0.0216	0.0153	0.0026-0.0813	0.0273	0.0158	0.0056-0.081
1981	0.0085	0.006	0.001-0.033	0.0185	0.0131	0.0022-0.0736	0.0001 ^b	0.0001	0-0.0353
1982	0.0001 ^b	0.0001	0-0.0188	0.0001 ^b	0.0001	0-0.0438	0.0001 ^b	0.0001	0-0.0348
1983	0.0157	0.0091	0.0032-0.0454	0.0215	0.0153	0.0026-0.0798	0.0099	0.0099	0.0002-0.0534
1984	0.0147	0.0086	0.0029-0.0433	0.0353	0.0218	0.0062-0.1055	0.0001 ^b	0.0001	0-0.0339
1985	0.0104	0.0074	0.0012-0.0368	0.0001 ^b	0.0001	0-0.0416	0.0184	0.013	0.0022-0.0661
1986	0.0148	0.0088	0.0028-0.0436	0.0280	0.0228	0.002-0.102	0.0092	0.0092	0.0002-0.0504
1987	0.0183	0.0094	0.0048-0.0475	0.0203	0.0147	0.0023-0.0756	0.0150	0.0106	0.0018-0.0575
1988	0.0328	0.0125	0.013-0.0677	0.0706	0.0307	0.0239-0.1558	0.0087	0.0087	0.0002-0.0485
1989	0.0144	0.0084	0.0029-0.0417	0.0001 ^b	0.0001	0-0.0386	0.0238	0.0138	0.0049-0.0711
1990	0.0198	0.0089	0.0063-0.0474	0.0324	0.0163	0.0087-0.0876	0.0078	0.0078	0.0002-0.0453
1991	0.0332	0.0126	0.0132-0.0679	0.0647	0.0301	0.0198-0.1482	0.0160	0.0113	0.0019-0.0584
1992	0.0207	0.0094	0.0066-0.0488	0.0258	0.0152	0.0051-0.0785	0.0142	0.01	0.0017-0.0538
1993	0.0448	0.0142	0.0214-0.082	0.0752	0.0295	0.029-0.1552	0.0218	0.0126	0.0045-0.0653
1994	0.0221	0.0099	0.0072-0.0512	0.0334	0.0194	0.0068-0.0939	0.0140	0.0099	0.0017-0.0526
1995	0.0472	0.0143	0.0235-0.0843	0.0586	0.0244	0.021-0.1272	0.0376	0.017	0.0121-0.0886
1996	0.0330	0.0117	0.0142-0.0649	0.0527	0.0216	0.0193-0.115	0.0163	0.0116	0.0019-0.0579
1997	0.0460	0.0139	0.0229-0.0819	0.0798	0.0289	0.0337-0.1566	0.0206	0.0119	0.0042-0.0617
1998	0.0327	0.0116	0.0141-0.0641	0.0565	0.0232	0.0206-0.1216	0.0125	0.0088	0.0015-0.0481
1999	0.0520	0.0144	0.0277-0.0888	0.0782	0.0262	0.0355-0.1482	0.0274	0.0138	0.0074-0.0715
2000	0.0273	0.0103	0.011-0.0561	0.0513	0.0211	0.0186-0.1116	0.0063	0.0063	0.0002-0.038
2001	0.0594	0.0154	0.0332-0.0978	0.0967	0.0294	0.048-0.1724	0.0273	0.0137	0.0074-0.071
2002	0.0506	0.014	0.0269-0.0863	0.0456	0.0209	0.0143-0.1056	0.0537	0.0191	0.023-0.1069
2003	0.0260	0.0099	0.0104-0.0536	0.0314	0.0182	0.0064-0.0868	0.0256	0.0128	0.0069-0.0672
2004	0.0303	0.0108	0.013-0.0597	0.0663	0.0254	0.0263-0.1346	0.0053	0.0053	0.0001-0.0347
2005	0.0609	0.0153	0.0347-0.0989	0.1108	0.0335	0.0552-0.195	0.0335	0.0152	0.0107-0.0793
2006	0.0540	0.0141	0.0301-0.0894	0.0648	0.0248	0.0257-0.1316	0.0522	0.0185	0.0225-0.1039

Continued

Year	Overall mortality rate			Male mortality rate			Female mortality rate		
	Incidence rate ^a	SE	95% CI	Incidence rate ^a	SE	95% CI	Incidence rate ^a	SE	95% CI
2007	0.0401	0.0117	0.0205-0.0707	0.0613	0.0235	0.0243-0.1251	0.0265	0.0119	0.0085-0.0653
2008	0.0296	0.01	0.0134-0.0569	0.0289	0.0149	0.0075-0.0756	0.0298	0.0137	0.0093-0.0721
2009	0.0254	0.0091	0.0109-0.0508	0.0411	0.0186	0.0132-0.0948	0.0141	0.0081	0.0029-0.0462
2010	0.0641	0.0149	0.0383-0.1006	0.1350	0.0341	0.0766-0.2184	0.0150	0.0087	0.003-0.0482
2011	0.0537	0.0136	0.0304-0.0877	0.1149	0.0311	0.0622-0.1923	0.0101	0.0072	0.0012-0.041
2012	0.0468	0.0127	0.0253-0.079	0.0888	0.0271	0.0438-0.1582	0.0211	0.0122	0.0044-0.061
2013	0.0516	0.0127	0.0298-0.0835	0.0805	0.0247	0.0396-0.1447	0.0334	0.014	0.0119-0.0755

SE, standard error; NR, not reached.

^aMortality rates were age-adjusted to the 2000 US standard population and expressed per 100,000 person-years.

^bThe values equal to zero when there were no cases reported were modified to a small positive constant (e. g. 0.0001), according to the statistical transformation.