

Supplementary Table 1. The clinical features of bladder cancer patients related to Hemocyte index involved in the validation set.

Hemocyte index	Patients	Gender		Age		BMI		Grade		Recurrence		Chemotherapy		
		male	female	≥ 65	< 65	18.5~23.9	<18.5 or >23.9	high	low	Yes	No	gemcitabine	other	methods
WLR-High	199	165	34	137	62	59	126	119	78	37	162	74	81	
WLR-Low	276	215	61	152	124	93	174	127	143	47	221	136	98	
P-value / χ^2		0.178 / 1.818		0.002* / 9.205		0.515 / 0.423		0.004* / 8.166		0.769 / 0.086		0.044* / 4.042		
WHR-High	187	147	40	117	70	60	115	112	72	38	147	78	70	
WHR-Low	288	233	55	172	116	92	185	134	149	46	236	132	109	
P-value / χ^2		0.542 / 0.373		0.535 / 0.385		0.814 / 0.055		0.004* / 8.176		0.245 / 1.354		0.691 / 0.158		
WNR-High	283	226	57	162	121	94	178	133	146	49	227	139	103	
WNR-Low	192	154	38	127	65	58	122	113	75	35	156	71	76	
P-value / χ^2		0.926 / 0.009		0.051 / 3.805		0.607 / 0.265		0.008* / 6.968		0.874 / 0.025		0.825 / 0.049		
WMR-High	287	218	69	163	124	87	187	138	146	49	234	125	112	
WMR-Low	188	162	26	126	62	65	113	108	75	35	149	85	67	
P-value / χ^2		0.007* / 7.404		0.026* / 4.987		0.295 / 1.098		0.028* / 4.852		0.639 / 0.22		0.08 / 3.075		
WRR-High	86	71	15	58	28	28	51	53	30	13	71	32	32	
WRR-Low	389	309	80	231	158	124	249	193	191	71	312	178	147	
P-value / χ^2		0.512 / 0.43		0.166 / 1.92		0.707 / 0.141		0.024* / 5.06		0.508 / 0.438		0.484 / 0.49		
NLR-High	190	157	33	131	59	58	119	113	74	36	154	68	78	
NLR-Low	285	223	62	158	127	94	181	133	147	48	229	142	101	
P-value / χ^2		0.242 / 1.371		0.003* / 8.732		0.756 / 0.096		0.006* / 7.517		0.655 / 0.2		0.023* / 5.165		
LMR-High	201	145	56	104	97	58	134	85	113	33	164	95	78	
LMR-Low	274	235	39	185	89	94	166	161	108	51	219	115	101	
P-value / χ^2		0.0002* / 13.457		0.001* / 12.114		0.186 / 1.749		0.0003* / 13.1		0.553 / 0.353		0.742 / 0.108		
PLR-High	138	104	34	98	40	50	82	82	54	26	112	54	53	
PLR-Low	337	276	61	191	46	102	218	164	167	58	271	156	126	
P-value / χ^2		0.09 / 2.873		0.033* / 4.525		0.219 / 1.509		0.035* / 4.466		0.756 / 0.097		0.391 / 0.735		
Risk-High	134	100	34	97	37	49	79	80	52	26	108	53	51	
Risk-Low	341	280	61	192	149	103	221	166	169	58	275	157	128	
P-value / χ^2		0.066 / 3.368		0.001* / 10.444		0.188 / 1.732		0.031* / 4.641		0.613 / 0.255		0.47 / 0.522		

Statistical analyses were carried out using Pearson χ^2 test

*P<0.05 was considered significant; BMI=Body Mass Index; WLR=white blood cell to lymphocyte ratio; WHR=white blood cell to hemoglobin ratio;

WNR=white blood cell to neutrophil ratio; WMR=white blood cell to monocyte ratio; WRR=white blood cell to erythrocyte ratio;

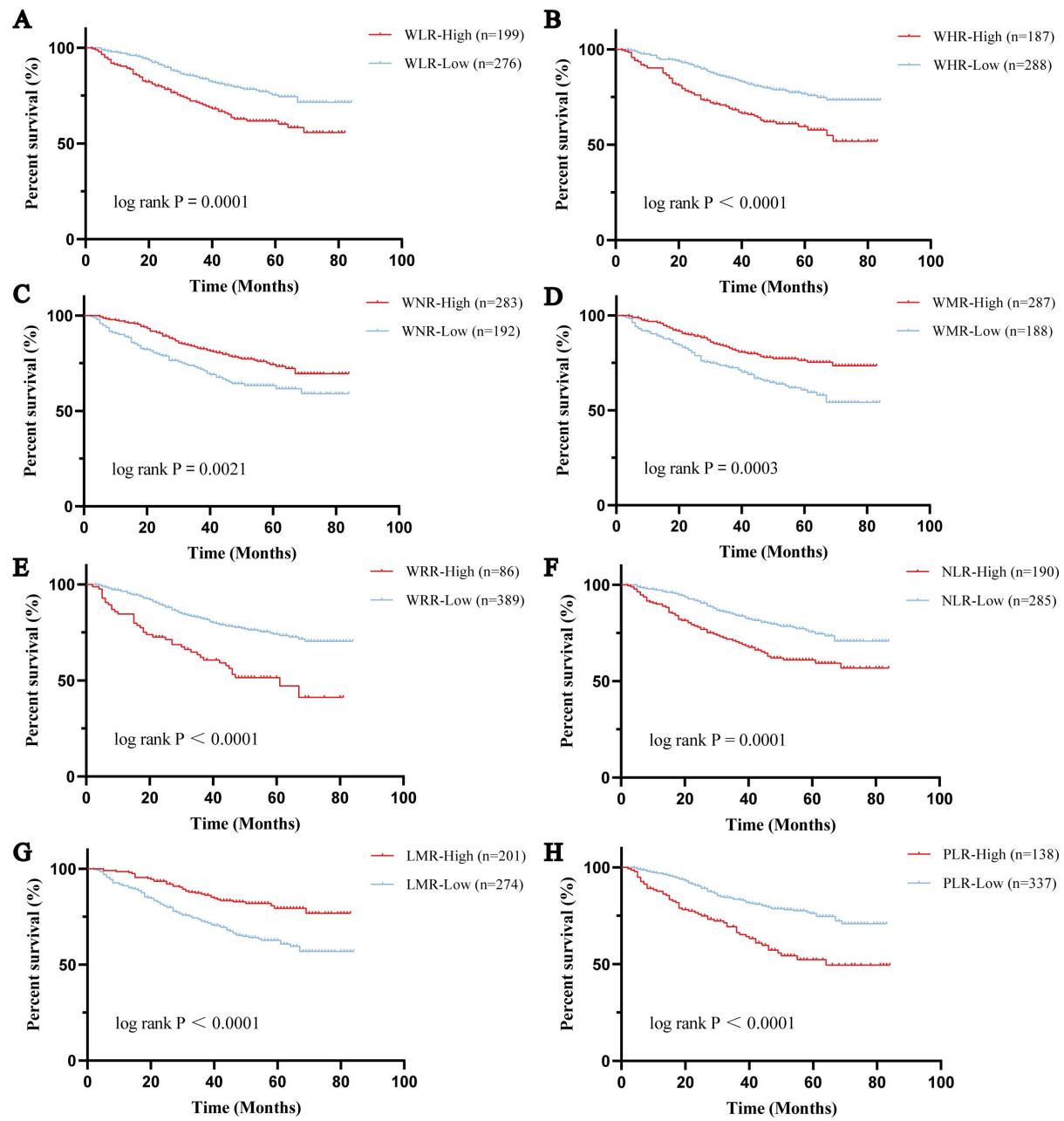
NLR=neutrophil to lymphocyte ratio; LMR=lymphocyte to monocyte ratio; PLR=platelet to lymphocyte ratio.

Supplementary Table 2. Univariate and multivariate Cox regression analysis for overall survival of patients with bladder cancer in the validation set.

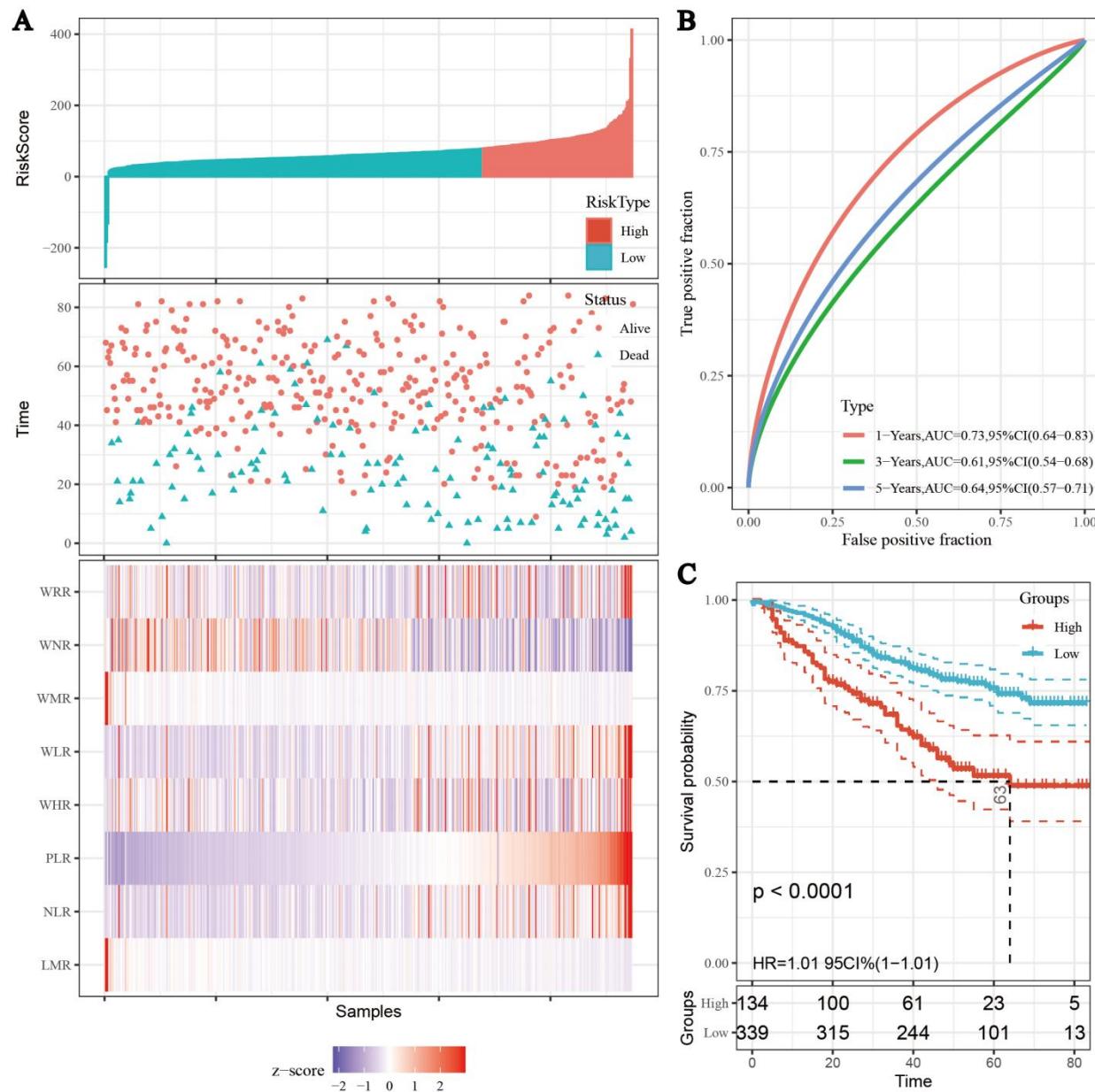
Variates	Univariate analysis		Multivariate analysis	
	HR(95% CI)	P value	HR(95% CI)	P value
Age (≥65 vs <65)	2.306(1.55-3.431)	<0.001*	1.78(1. 174-2.697)	0.007*
Gender (male vs female)	1.235(0.788- 1.935)	0.357	-	-
BMI (normal vs abnormal)	0.976(0.675- 1.413)	0.899	-	-
Tumor grade (high vs low)	2. 13(1.469-3.089)	<0.001*	1.607(1.095-2.357)	0.015*
Recurrence (Yes vs No)	1.373(0.918-2.053)	0.123	-	-
Chemotherapy (gemcitabine vs others)	0.998(0.674- 1.478)	0.991	-	-
WLR (high vs low)	1.885(1.342-2.648)	<0.001*	0.692(0.275- 1.744)	0.435
WHR (high vs low)	2. 195(1.561-3.087)	<0.001*	1.924(1.212-3.053)	0.006*
WNR (high vs low)	0.59(0.42-0.829)	0.002*	1.08(0.495-2.356)	0.846
WMR (high vs low)	0.525(0.374-0.738)	<0.001*	0.63(0.413-0.963)	0.033*
WRR (high vs low)	2.639(1.83-3.805)	<0.001*	1.531(0.942-2.486)	0.085
NLR (high vs low)	1.929(1.374-2.709)	<0.001*	1.423(0.463-4.376)	0.539
LMR (high vs low)	0.441(0.302-0.644)	<0.001*	0.756(0.43- 1.33)	0.329
PLR (high vs low)	2.266(1.603-3.203)	<0.001*	1.945(1.325-2.2.857)	0.001*
Risk (high vs low)	2.348(1.662-3.318)	<0.001*	2.005(1.365-2.947)	<0.001*

Statistical analyses were performed by Cox proportional hazards regression.

*P<0.05 was considered significant; BMI=Body Mass Index; WLR=white blood cell to lymphocyte ratio; WHR=white blood cell to hemoglobin ratio; WNR=white blood cell to neutrophil ratio; WMR=white blood cell to monocyte ratio; WRR=white blood cell to erythrocyte ratio; NLR=neutrophil to lymphocyte ratio; LMR=lymphocyte to monocyte ratio; PLR=platelet to lymphocyte ratio.



Supplementary Figure 1. The KM curves of inflammatory marks for patients with BLCA in the validation set. A-H KM curve was made to exhibit the prognosis of the different expression level of WLR, WHR, WNR, WMR, WRR, NLR, LMR and PLR respectively.



Supplementary Figure 2. The new risk model was established to detect the OS of patients with BLCA in the validation set. All patients were distinguished into high and low risk based on the risk score (A, upper), the relationship between survival time and prognosis of patients in the two corresponding groups (A, middle), the heatmap of inflammatory marks between the two groups (A, lower). Receiver operating characteristic (ROC) curve analysis of the new prognostic model at 1,3,5 years (B). Kaplan-Meier curves showing OS of groups with different risk(C).