



PDL1 protein expression is a prognostic factor in triple negative breast cancer

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BACKGROUD

Programmed death-liangd-1(PDL1) is a molecule involved in immune evasion in breast cancer. To determine PD1/PDL1 expression in early stage of triple-negative breast cancer, and to analyze the relationship between their expression and prognosis.

METHODS

Immunohistochemistry (IHC) was performed on paraffin-embedded tumor samples. Logistic regression was used to analyze the associations between PDL1 protein expression and long-term prognosis. Kaplan-Meier plot and log-rank test were used to compare disease-free survival (DFS) between groups. A cox proportional hazards model was used to calculate the adjusted hazard ratio (HR) with 95% confidential interval (95%CI).

RESULTS

205 triple-negative patients were enrolled from 1 June 2009 to 31 Oct 2015. Patients had a representative tumor specimen (formalin-fixed, paraffin-embedded archival) for testing of PDL1 expression. The median follow-up time was 66.9 months. The 5-year DFS rate was 86.1% (95% CI 81.4%-90.8%) and the 5-years OS rate was 93.6% (95% CI 91.0%-97.6%). In the univariate analysis, we found that lymph nodes, Ki67 index and PDL1 expression were associated with DFS and OS. In the multivariate analysis, patients with PDL1 expression showed significantly more favorable prognosis in DFS (HR 2.875, 95%CI 1.216-6.796, p=0.016) and improve the OS compared with the PDL1 negative group (HR 3.157, 95%CI 0.844-11.809, p=0.088).

RESULTS

Table 1. Table 1 PDL1 expression between different clinicopathological factor

Characteristic	PDL1-	PDL1+
Ages		
<50	67	50
≥50	48	40
Lymph nodes		
Negative	70	66
Positive	45	24
TNM stage		
I	35	39
II	68	48
III	12	3
KI67 index		
≤30	48	22
> 30	67	68

Table 2. Univariate and multivariate analysis for disease-free survival

Factors	Disease-free survival					
	Univariate			Multivariate		
	HR	95% CI	P value	HR	95% CI	P value
PDL1						
Negative	1					
Positive	3.456	1.493-7.999	0.004	2.875	1.216-6.796	0.016
Age						
<50	1					
≥50	1.127	0.547-2.324	0.746	1.269	0.586-2.748	0.546
Lymph nodes						
Negative	1					
Positive	0.401	0.195-0.828	0.014	0.450	0.213-0.951	0.036
KI67 index						
≤30	1					
> 30	2.113	1.026-4.354	0.042	1.844	0.852-6.796	0.120

Figure 1. Disease free survival and overall survival, respectively.

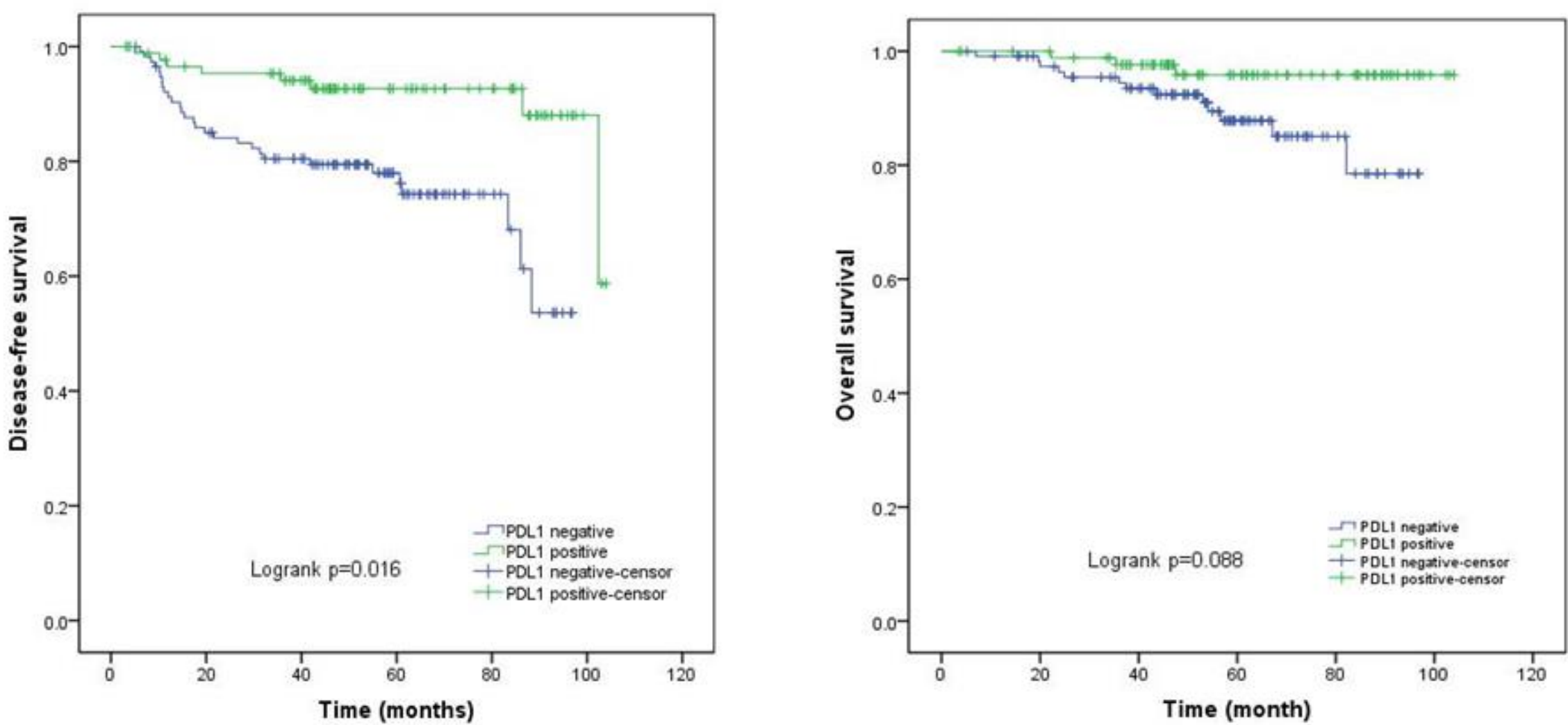


Table 3. Univariate and multivariate analysis for overall survival

Factors	Overall survival					
	Univariate			Multivariate		
	HR	95% CI	P value	HR	95% CI	P value
PDL1						
Negative	1			1		
Positive	3.696	1.020-13.394	0.047	3.157	0.844-11.809	0.088
Age						
<50	1			1		
≥50	0.734	0.264-2.039	0.734	0.743	0.255-2.160	0.585
Lymph nodes						
Negative	1			1		
Positive	0.272	0.095-0.784	0.016	0.309	0.106-0.902	0.032
KI67 index						
≤30	1			1		
> 30	1.556	0.554-4.370	0.402	1.166	0.392-3.469	0.782

CONCLUSIONS

PDL1 protein expression is a predictive biomarker of good prognostic factor for survival in triple-negative breast cancer patients.

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