STUDY THE PROGNOSTIC VALUE OF INFLAMMATORY BLOOD MARKER FOR OVERALL SURVIVAL IN NON-METASTATIC BREAST CANCER

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Introduction

The role of the host immunological and inflammatory responses in the tumor's microenvironment for the initiation and spread of cancer has been demonstrated in multiple studies, therefore based on the spatial distribution of immune cells in the tumor microenvironment, tumors can be divided into hot tumors and cold tumors. The systemic inflammatory reaction brought on by a tumor leads to alterations of peripheral blood white blood cells, As a consequence, the association between inflammatory cells in the peripheral blood may offer an accessible and early method to assess the prognosis of a patient through Inflammatory blood marker such as neutrophil lymphocyte ration NLR and platelets lymphocyte ration PLR.

Aim of the work

The present study aimed to determine the prognostic value of the NLR and PLR to predict OS and DFS among non-metastatic breast cancer patients.

Patient and Methods

348 patients pathological and radiological proven to be non-metastatic breast cancer were reviewed retrospectively, autoimmune and hematological diseases were excluded.
NLR was calculated by the ratio between the absolute count of neutrophils and the absolute count of lymphocytes. PLR was calculated by dividing the absolute number of platelets by the absolute number of lymphocytes, cut off value calculated using ROC curve.

The ratio closest to the point with maximum sensitivity and specificity using You den index was defined as the optimal cutoff value. As a result, the optimal cut off value was 1.65 for the NLR this value allowed identifying two populations: NLR^{low} (≤1.65), 181 patients and NLR^{high} (>1.65), 167 patients. Similarly, a cut-off value of PLR 125.52 was identified and two populations of patients were stratified: PLR^{low} (≤125.52), 141patients and PLR^{high} (>125.52), 207 patients.

Results

Table : Kaplan-Meier survival curve for overall survival and disease free survival with NLR

OS	Mean	Median	% 1 year	% 2 year	% 3 year	% 5 year	% End of study	Log rank	
								χ^2	p
NLR									
Low (≤1.65)	118.74	–	99.4%	98.3%	95.5%	85.3%	72.7%	4.266*	0.039*
High (>1.65)	106.92	–	97.6%	91.5%	85.4%	77.2%	64.4%		
DFS	**Mean**	**Median**	**% 1 year**	**% 2 year**	**% 3 year**	**% 5 year**	**% End of study**	**Log rank**	
								χ^2	p
NLR									
Low (≤1.65)	104.40	129.17	98.3%	93.8%	88.1%	78.8%	49.9%	4.317*	0.038*
High (>1.65)	94.21	–	89.8%	80.0%	71.4%	62.8%	60.7%		

*statistically significant at $P \leq 0.05$

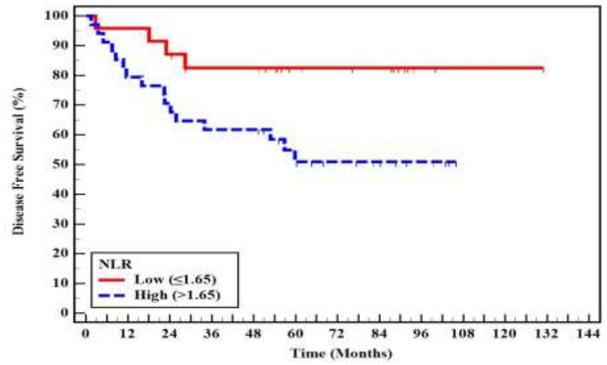

Figure: Kaplan-Meier survival curve for Disease Free Survival with NLR in TNBC subtype

Conclusion

- High NLR was significantly associated with worse overall survival and disease free survival in patient with non-metastatic breast cancer. In contrast, PLR had no prognostic impact on OS and DFS in those patients
- Triple negative breast cancer subtype is the only molecular subtype that show significant correlation with NLR for DFS