PREOPERATIVE LYMPHOCYTE COUNT IN RELATION TO SARCOMA PROGNOSIS

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INTRODUCTION:

Inflammation plays a major role in tumor development, progression and metastasis. Multiple inflammatory markers such as ALC, NLR, LMR and PLR have been discovered as prognostic markers for various malignancies. In this study we investigate the preoperative lymphocyte count and other cell count ratios and their relation to overall survival and prognosis of sarcoma patients who underwent radical resection surgery.

METHODS:

A total of 142 patients from the hospital Orthopedics' Oncology database who fulfilled the inclusion criteria were included into this retrospective study. Kaplan-Meier curve and Multivariate Cox proportional models were used to calculate the overall survival of patients with sarcoma who underwent radical excision surgery.

RESULTS:

In univariate analysis, high preoperative LMR is significantly associated with better overall survival and prognosis in sarcoma patients whereas high preoperative NLR is significantly associated with shorter overall survival and poorer prognosis. Multivariate analysis shows that NLR (HR: 1.87; 95% CI: 1.17, 2.99, P= 0.009) at and LMR (HR: 0.42; 95% CI: 0.20, 0.87) at are good predictor of overall survival at 5 years and 3 years post-surgery respectively. The mean overall survival for patients with low NLR and High NLR groups at 5 years post-surgery are 43 months and 28 months respectively while the mean overall survival for patients with high LMR and low LMR groups are 47 and 36 months. At 3 years post-surgery, patients overall survival with low NLR and high NLR groups are 30 months and 22 months while the overall survival of patients groups with high and low LMR are 33 months and 24 months respectively.

DISCUSSIONS:

Our findings suggest that preoperative NLR and LMR are good predictive markers of overall survival for sarcoma patients. The prognosis of sarcoma patients does not only depends on the conventional clinical and histological factors. Host inflammatory responds towards tumor also have a significant effect on the outcome of the patient.
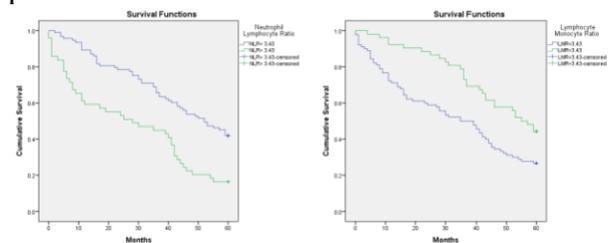

Figure 1: Kaplan-Meier survival curve among patients with different NLR and LMR at 5 years
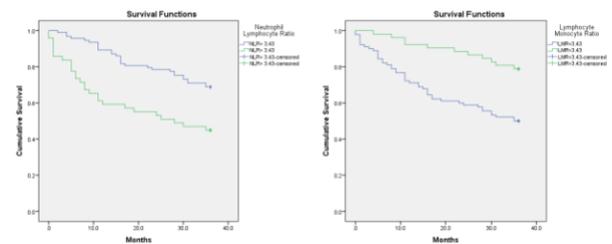

Figure 2: Kaplan-Meier survival curve among patients with different NLR LMR at 3 years.

CONCLUSION:

In conclusion, preoperative NLR and LMR are good prognostic markers for predicting the clinical outcome of patients with sarcoma.

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