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Elevated preoperative neutrophil/lymphocyte ratio is associated with poor prognosis in soft-tissue sarcoma patients

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Background: Recent data indicate that tumour microenvironment, which is influenced by inflammatory cells, plays a crucial role in cancer progression and clinical outcome of patients. In the present study we investigated the prognostic relevance of preoperative neutrophil/lymphocyte (N/L) ratio on time to tumour recurrence (TTR) and overall survival (OS) in soft-tissue sarcoma (STS) patients who underwent curative surgical resection.

Methods: 260 STS patients were included in this retrospective study. Kaplan Meier curves and multivariate Cox proportional models were calculated for TTR and OS.

Results: In univariate analysis, elevated N/L ratio was significantly associated with decreased TTR (HR, 2.340; 95%CI, 1.286-4.259; p=0.005) and remained significant in the multivariate analysis (HR, 2.183; 95%CI, 1.191-4.003; p=0.012). Patients with elevated N/L ratio showed a median TTR of 78.7 months. In contrast, patients with low N/L ratio had a median TTR of 99.8 months. Regarding OS, elevated N/L ratio was also significantly associated with decreased survival in univariate analysis (HR, 2.896; 95%CI, 1.810-4.634; p=0.001) and remained significant in multivariate analysis (HR, 2.615; 95%CI, 1.616-4.231; p=0.001).

Conclusion: In conclusion, our findings suggest that an elevated preoperative N/L ratio predicts poor clinical outcome in STS patients and may serve as a cost-effective and broadly available independent prognostic biomarker.

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