Abstract

Increasing evidence indicates the involvement of inflammation and coagulation in cancer progression and metastases. Inflammatory biomarkers hold great promise for improving the predictive ability of existing prognostic tools in cancer patients. In the present study, we investigated several inflammatory indices with regard to their prognostic relevance for predicting clinical outcome in soft tissue sarcoma (STS) patients. Three hundred forty STS patients were divided into a training set (n=170) and a validation set (n=170). Besides well-established clinico-pathological prognostic factors, we evaluated the prognostic value of the neutrophil/lymphocyte (N/L) ratio, the lymphocyte/monocyte (L/M) ratio and the platelet/lymphocyte (P/L) ratio using Kaplan-Meier curves and univariate as well as multivariate Cox regression models. Additionally, we developed a nomogram by supplementing the L/M ratio to the well-established Kattan nomogram and evaluated the predictive accuracy of this novel nomogram by applying calibration and Harrell's concordance index (c-index). In multivariate analysis, a low L/M ratio was significantly associated with decreased CSS and DFS (HR=0.41, 95%CI=0.18-0.97, p=0.043; HR=0.39, 95%CI=0.16-0.91, p=0.031, respectively) in the training set. Using the validation set for confirmation, we found also in multivariate analysis an independent value for CSS (HR=0.33, 95%CI=0.12-0.90, p=0.03) and for DFS (HR=0.36, 95%CI=0.16-0.79, p=0.01). The estimated c-index was 0.74 using the original Kattan nomogram and 0.78 when the L/M ratio was added. Our study reports for the first time that the pre-operative L/M ratio represents a novel independent prognostic factor for prediction the clinical outcome in STS patients. This easily determinable biomarker might be helpful in improved individual risk assessment.