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## **Prognostic Role of the Neutrophil-to-lymphocyte Ratio in Patients with Chronic Kidney Disease**

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**Objectives:** The neutrophil-to-lymphocyte ratio (NLR) has been demonstrated to have prognostic value in cardiovascular disease, infection, inflammatory disease, and several types of cancer. Therefore, it is expected that NLR has predictive value in patients with chronic kidney disease (CKD) but it has not been validated. Here, I aimed to investigate the possibility of NLR as a predictor of progression of CKD.

**Methods:** This retrospective observational study included 141 patients with non-dialysis CKD. Subjects were divided into terciles (T1, T2, and T3) according to NLR. The primary outcome of interest was defined as a composite renal event, which included a decline in the estimated glomerular filtration rate (eGFR) of at least 50% or onset of end-stage renal disease (ESRD) during the follow-up period.

**Results:** The median follow-up duration was  $5.45 \pm 2.11$  years. The median NLR for each group was  $1.35 \pm 0.05$  in T1 (n=47),  $2.16 \pm 0.04$  in T2 (n=47) and  $4.29 \pm 0.73$  in T3 (n=47). The group with the highest NLR (T3) had higher baseline CKD and serum creatinine and lower eGFR levels than the group with the lowest NLR (T1). The cumulative incidence of composite renal events was significantly increased in T3, compared to T1 ( $p < 0.001$ , log-rank test). Cox regression analysis revealed that high NLR was independently associated with the risk of composite renal events (adjusted hazard ratio 2.85, 95% confidence interval 1.18-6.93).

**Conclusions:** A higher NLR reflects the more advanced stage of CKD and suggests that a role for NLR as a biomarker for predicting CKD progression.