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# Predictive value of serum albumin-to-globulin ratio for incident chronic kidney disease

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**Objectives:** Inflammation plays a pivotal role in the pathogenesis of chronic kidney disease (CKD). Significant association between serum albumin-to-globulin (AG) ratio and inflammation led us to investigate the prognostic value of serum AG ratio for incident CKD.

**Methods:** The predictive value of serum AG ratio, white blood cell (WBC), and C-reactive protein (CRP) for CKD development was assessed in 8,057 non-CKD participants from a community-based, prospective cohort in Korea. Serum AG ratio was calculated by following equation: serum albumin (g/L)/[serum total protein (g/L)-serum albumin (g/L)]. Incident CKD was defined as estimated glomerular filtration rate <60 mL/min/1.73 $m^2$ and/or proteinuria of more than 1+ on dipstick.

**Results:** Median serum AG ratio was 1.38 (interquartile range, 1.28-1.52). During a mean follow-up duration of 9.1±3.7 years, 1,732 participants (21.5%) developed CKD. In a multivariable Cox analysis, a low serum AG ratio was significantly associated with an increased risk of incident CKD (Q1, serum AG ratio <1.26: hazard ratio [HR]=1.651, 95% confidence interval [CI]=1.406-1.938, Q5 as reference; per 1 standard deviation decrease, HR=1.170, 95% CI=1.109-1.234). Serum AG ratio was the only indicator to improve the predictability of CKD development (net reclassification index=0.158, P <0.001; integrated discrimination improvement=0.005, P <0.001), compared with WBC or CRP.

**Conclusions:** This study demonstrates that low serum AG ratio is an independent predictor for CKD development and exhibits a stronger predictive value than other inflammatory markers. These findings suggest that determining serum AG ratio may be more valuable for predicting adverse kidney outcomes in non-CKD populations.