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만성신질환이 없는 일반인구집단에서 low-grade albuminuria의 예측 인자로서 혈중 인

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Serum Phosphorus as a Predictor of Low-Grade Albuminuria in a General Population without Chronic Kidney Disease

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Background: High levels of serum phosphorus, even within the normal range, have been associated with cardiovascular (CV) morbidity. Low-grade albuminuria (LGA) was demonstrated to be related to increased CV events in various study populations. The present study aimed to investigate the association between serum phosphorus levels and LGA in the general population.

Methods: We examined the individuals who had undergone health inspections. We evaluated the correlation between serum phosphorus and LGA in 8,953 participants (mean age, 47.4 years) with estimated glomerular filtration rates (eGFR) $\geq$60 mL/min per 1.73m^2 and urinary albumin to creatinine ratios (UACRs) <30 mg/g.

Results: The mean UACR was significantly higher in the uppermost quartile of serum phosphorus concentrations than in other quartiles. In multivariate regression analysis, serum phosphorus remained an independent predictor of increased UACR (B=0.610, $p<0.001$). Subgroup analysis showed that this association was irrespective of age, gender, presence of hypertension or diabetes, body mass index, and eGFR.

Conclusion: In our population-based study, higher serum phosphorus was independently related to LGA in individuals without evidence of renal dysfunction. Because LGA is considered to be a marker for endothelial dysfunction, our data suggest the involvement of endothelial dysfunction in the relationship between elevated serum phosphorus concentrations and the increased risk for CV disease.

Key Words: 혈중 인, 알부민뇨, 일반 인구 집단
Serum phosphorus, Low-grade albuminuria, General population