

뇌졸중 환자에서 혈중 인산농도와 ALP와 예후와의 연관성은 신장기능에 따라 상이하다

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Differential Effect of Alkaline Phosphatase and Phosphorus on Vascular Outcomes according to Renal Function in the Stroke Population

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Background: The effect of elevated alkaline phosphatase (ALP) and phosphorus on vascular outcomes has been reported in several subgroups of patients. However, the long-term effect of ALP and phosphorus on vascular outcomes in stroke patients remains unknown. In this study, the differential effect of alkaline phosphatase (ALP) and phosphorus on cardiovascular and cerebrovascular outcomes was investigated in stroke patients, emphasizing the role of impaired renal function.

Methods: We analyzed the data of 1820 stroke patients obtained from a prospectively collected stroke registry and investigated the association between ALP and phosphorus and vascular outcomes.

Results: In multivariable Cox's proportional hazard models, ALP was independently associated with composite vascular events, mortality, any stroke, and hemorrhagic stroke, whereas phosphorus lost statistical significance after adjustment for confounders. In a subgroup analysis according to estimated glomerular filtration rate (eGFR), ALP showed a similar trend in the low eGFR and high eGFR groups. However, phosphorus showed a differential association with composite outcomes and mortality in the low eGFR group, and an interaction between eGFR and phosphorus was significant for composite outcomes. In a propensity score-matched cohort, the positive interaction between the eGFR group and phosphorus for predicting composite outcomes remained significant.

Conclusions: This study showed that ALP and phosphorus were predictors for vascular outcomes in stroke patients. However, the association was affected differentially by impaired renal function. In addition, ALP level was associated with increased risk of hemorrhagic stroke among stroke subtypes.

Key Words: 뇌경색, 인, 예후
Stroke, Phosphorus, ALP