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Prognostic factors for the percutaneous transluminal coronary angiography in chronic hemodialysis patients

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Objectives: Several factors such as low ejection fraction (EF), age, and previous history of ischemic heart attack have been recognized as risk factors for percutaneous coronary intervention (PCI) in the general population. Risk factors for poor outcome in hemodialysis patients differ from the general population. Although the prevalence of hemodialysis patients undergoing coronary angiography (CA) is high, outcome predicting factors are not well elucidated. Therefore, outcome and factors associated with it were investigated among hemodialysis patients who underwent CA in a single center.

Methods: Retrospective analyses were conducted in HD patients who underwent CA from 1 January 2014 to 31 December 2014 at Severance Hospital of Yonsei University Health System. The patients were followed until 31st December, 2018. Demographic characteristics, laboratory parameter, echocardiographic findings, and dialysis related parameters at the time of CA were collected. The primary outcome was overall mortality.

Results: A total of 117 patients were included in the final analysis. The mean age was 64.8 ± 10.7 years, 73 (62.4%) were male, and 44 (37.6%) were being treated for diabetes. Among 117 patients who underwent CA, 56 (47.9%) subjects underwent coronary angioplasty. During a mean observational duration of 3.4 person-years mortality occurred in 40 (34.2%) subjects. When the participants were grouped into survivors and non-survivors, age, history of peripheral artery occlusive disease (PAOD), and echocardiographic e/e' values were significantly higher in the non-survivor group. Interestingly, diabetes was comparable between the groups. Multivariable Cox regression analysis revealed that age, PAOD history, and e/e' were independent factors related with mortality after adjusting for confounding factors.

Conclusions: Outcome after PCI in hemodialysis patients was grave. Previous PAOD history and increased E/E' could be practical factors predicting mortality in hemodialysis undergoing CA.