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Nutritional status affects the risk of contrast induced nephropathy after percutaneous coronary intervention.

Miyeun Han, Harin Rhee, Eun Young Seong, Hye Won Lee, Sang Heon Song
Department of Internal Medicine-Nephrology, Busan National University Hospital, Korea, Republic of

Objectives:

Contrast induced nephropathy (CIN) is the major common cause of hospital acquired acute kidney injury and associated with longer hospital stay, increased morbidity, and mortality. Various risk factors for CIN after coronary artery angiography are known, however, the risk of malnutrition is not validated well. The aim of this study is to evaluate the effect of nutrition for CIN after coronary intervention.

Methods: Total 2173 subjects who got percutaneous coronary intervention (PCI) in Pusan National University hospital from Jan 2014 to Nov 2018 were included in this study. CIN is defined as an elevation of serum creatinine (Scr) of more than 25% or ≥0.5 mg/dl from baseline within 48 h. Patients with a serum albumin less than 3.5 grams/dL and TLC less than 1,500 cells per mm^3 were classified as having protein energy malnutrition(PEM).

Results:

169(7.8%) developed CIN after PCI. The subjects with CIN were older, had higher proportion of female, diabetes and hypertension. The level of hemoglobin, total lymphocyte count, albumin, estimated glomerular filtration rate were lower in CIN group, whereas the level of creatinine and C-reactive protein were higher in CIN group.

In univariate logistic regression analysis for CIN, age, female, diabetes, hypertension, heart rate, hemoglobin, total lymphocyte count, albumin, estimated GFR, CRP, proteinuria, phosphate was significant related. In multivariate logistic regression analysis with forward stepwise, female, heart rate, albumin, proteinuria, total lymphocyte count was significant related with CIN.

When we combine serum albumin level and TLC for PEM, PEM was still significant risk factors in multivariate logistic regression analysis (HR 3.604, 95% CI 2.132, 6.094, P<0.001).

Conclusions:

Protein energy malnutrition raised the risk of CIN.