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THE ROLE OF HYDRATION ON THE PREVENTION OF MID-TERM RENAL INSUFFICIENCY IN CKD PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION

Poster Contributions
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Authors: *Arata Hagikura, Kenji Goto, Yuetsu Kikuta, Hideo Takebayashi, Seiichi Haruta, Fukuyama Cardiovascular Hospital, Hiroshima, Japan*

Background: Saline hydration decreases the incidence of contrast-induced acute kidney injury (CI-AKI). While, there is little data regarding the role of hydration on the mid-term (3-to-12 month) renal function decline in chronic kidney disease (CKD, eGFR<60ml/min/1.73m2) patients undergoing percutaneous coronary intervention(PCI).

Methods: Consecutive 976 patients undergoing PCI except for end stage renal disease requiring dialysis (n=38), acute myocardial infarction (n=172), newly starting ACEI/ARB medication (n=74), milder renal insufficiency (eGFR≥60)(n=432) were studied. Hydration group (n=89) received normal saline 12 hour prior to index PCI at a rate of 1ml/kg/hour. Control group (n=153) received no pre-procedural hydration. Follow-up rate was 93.1%(242/260). The study outcomes of kidney function decline were investigated using a value of relative reduction ratio (%RR) of calculated creatinine clearance (CCC) in comparison with baseline CCC just before index PCI.

Results: No difference was observed in baseline eGFR(Hydration group 48.2±8.8 vs control group 47.8±11.0). There was significantly less renal function deterioration in Hydration group (%RR of CCC was -1.0±13.2% in hydration group, 4.1±14.5% in control group, p<0.01) even in milder CKD(stage3A, 60>eGFR≥45) group(-1.7±12.1% vs 2.0±11.3%, p<0.05). Multiple regression analysis adjusted for age, gender, body mass index, HbA1c, LDL, diabetes mellitus, proteinuria, ejection fraction, baseline eGFR, and contrast volume demonstrated that hydration was independently correlated with lower %RR of CCC(r=-0.189, p<0.01).

Conclusion: Our data support the saline hydration for prophylaxis of persistent renal dysfunction in CKD patients undergoing PCI.