INTRAVENOUS FLUID THERAPY IS ASSOCIATED WITH A LOWER INCIDENCE OF CONTRAST INDUCED NEPHROPATHY AFTER CARDIAC CATHETERIZATION AND CORONARY INTERVENTION BUT NOT WITH A REDUCED INCIDENCE OF LONGER-TERM RENAL DYSFUNCTION OR HEMODIALYSIS

I2 Poster Contributions
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Background: Several trials have suggested that the administration of intravenous fluids before coronary angiography/cardiac catheterization and percutaneous coronary intervention lowers the risk of contrast-induced nephropathy (CIN), but data are relatively sparse on the possible protective effect of intravenous fluid (IVF) therapy on long-term sequelae after radiocontrast dye. We studied the effect of IVF administration on the incidence of CIN at 72 hours, at 3 months and on the incidence of dialysis in patients undergoing coronary angiography and coronary intervention.

Methods and Results: We studied 2200 predominantly male (98%) patients at a veterans’ administration medical center who underwent coronary angiography or percutaneous coronary intervention between January 2003 and September 2005. The mean age was 68 years. 1578 patients (72%) received IVF prior to the procedure and 622 (28%) did not. The IVF treated group had a higher prevalence of hypertension, dyslipidemia and a lower baseline creatinine CIN occurred in 2.6% of the patients in the IVF group and in 7.2% of the patients in the no IVF group at 72 hours (OR 0.34; 95% CI 0.22 - 0.52; P<0.0001). At 3 months, renal dysfunction was observed in 10.2% of patients of the IVF group versus 12.7% of the no IVF group (OR 0.78, CI 0.57-1.04; P=0.09). On multivariate analysis, after adjusting for baseline creatinine and other comorbidities, IVF therapy was associated with a significant reduction in CIN occurrence at 72 hours (OR 0.27, CI 0.10-0.48 P<0.0001) but was not associated with a change in the incidence of renal dysfunction at 3 months (OR 0.68, CI 0.38-1.1, P=0.1. After a median follow up of 67 months, 1.7 %) of the IVF group were placed on dialysis versus 11 (1.77 %) patients of the no IVF group (HR 0.97, CI 0.48-1.96; P=0.93).

Conclusions: In this cohort of predominantly male patients undergoing cardiac catheterization or percutaneous coronary intervention, IVF administration was associated with a protective effect on the incidence of CIN at 72 hours but was not associated with an effect on the incidence of renal dysfunction at 3 months, or on the initiation of dialysis in the long term.