



## **INNOVATION IN INTERVENTION**

American College of Cardiology in co-sponsorship with SCAI

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### **SODIUM HYDRATION THERAPIES EQUALLY EFFECTIVE IN PREVENTING RENAL FAILURE DURING CORONARY ANGIOGRAPHY**

**NEW ORLEANS, LA (March 26, 2007)** – In patients undergoing cardiac catheterization, contrast dye injection can sometimes cause contrast-induced nephropathy (CIN), otherwise known as acute renal failure. According to a study presented today at the American College of Cardiology's Innovation in Intervention: i2Summit, peri-procedural hydration treatment with either sodium bicarbonate or sodium chloride show similar rates of protection against CIN. Innovation in Intervention: i2 Summit is an annual meeting for practicing cardiovascular interventionalists sponsored by the American College of Cardiology in partnership with the Society for Cardiovascular Angiography and Interventions.

Patients undergoing coronary angiography to identify obstructions in the arteries are at risk for CIN, a dye-contrast complication that can lead to extended hospital stays, increased costs, dialysis and in some cases, death. Previous studies have evaluated hydration treatment with both sodium chloride and sodium bicarbonate fluids in animal models. With evidence suggesting sodium bicarbonate may be an effective strategy to improve hydration, researchers designed a human trial to compare the efficacy of sodium chloride versus sodium bicarbonate to prevent CIN in patients undergoing cardiac procedures.

The single-center randomized controlled trial at Kaiser Permanente, Los Angeles Medical Center, evaluated 353 patients with at least moderate renal dysfunction and one or more of the

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## *2 – 2 – 2 Sodium Hydration for Renal Failure*

following: age of 75 or older, diabetes mellitus, hypertension or congestive heart failure (CHF). Prior to the cardiac catheterization, patients were randomized to hydration with sodium chloride (n=178) or sodium bicarbonate (n=175). Study participants were given either study fluid at the same rate: 3 mL/kg for one hour before, and 1.5 mL/kg during and for four hours after the cardiac catheterization. Ioxilan, a non-ionic, low osmolar contrast agent was administered during all procedures.

The objective of the trial was to see how many patients developed renal dysfunction, defined as a less than 25 percent decrease in the GFR (a measure of kidney function). This result was seen in 13.5 percent of the sodium chloride group vs. 13.6 percent of the sodium bicarbonate group. Of the patients evaluated in this comparative trial, there were no differences between the groups in age, gender, BMI, prior MI, prior CHF, percutaneous revascularization at the procedure, diabetes mellitus and NAC pre-treatment. The number of patients with baseline severe kidney dysfunction (eGFR  $\leq$ 30) and the average contrast volume were similar in both treatment groups.

"Kidney dysfunction showed no variable difference between the two groups, revealing that hydration with sodium bicarbonate was not any more effective than sodium chloride in this randomized trial," said Somjot Brar, M.D., of Kaiser Permanente Southern California, and lead study author. "Our team is evaluating other possible therapies as there remains a need to improve methods to prevent CIN in patients undergoing angiography."

*Dr. Brar will present results of the "A Randomized Controlled Trial for the Prevention of Contrast Induced Nephropathy with Sodium Bicarbonate vs. Sodium Chloride in Persons Undergoing Coronary Angiography (the MEENA Trial)" study on Monday, March 26 at 11:45 a.m. CDT in La Nouvelle Orleans C.*

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The American College of Cardiology ([www.acc.org](http://www.acc.org)) represents the majority of board certified cardiovascular physicians in the United States. Its mission is to advocate for quality cardiovascular care through education, research, promotion, development and application of standards and guidelines- and to influence health care policy. ACC.07 and the i2 Summit is the largest cardiovascular meeting, bringing together cardiologists and cardiovascular specialists to share the newest discoveries in treatment and prevention, while helping the ACC achieve its mission to address and improve issues in cardiovascular medicine.