

Bicarb Protocol

Indication

Radiocontrast nephropathy is a common cause of hospital acquired acute renal failure and has been associated with an increased in-hospital mortality and LOS.¹⁻²

Various prevention strategies have been employed such as pre and post procedural hydration, vasodilators and acetylcysteine administration.

A study from JAMA printed in May of 2004 indicates that hydration with a bicarbonate solution may better prevent contrast induced nephropathy than NS hydration. Most renal failure is associated with metabolic acidosis and low urinary pH. NS may contribute to acidosis while the bicarbonate solution will buffer the pH.³

Other advantages of this prevention strategy are the low cost, lack of side effects and ability to administer in a timely manner.

Administration/Dosing

Solution: **150 mEq NaHCO₃ in 1000cc D5W**

1. 1 hour prior to contrast: Initial IV bolus – **3ml/kg/hour x 1 hour**
2. After 1 hour bolus: **1ml/kg/hour** during contrast exposure and **6 hours** post contrast.

References

1. Levy EM, Viscoli CM, Hurwitz RI. The effect of acute renal failure on mortality: a cohort analysis. *JAMA*. 1996; 275: 1489-1494.
2. McCullough PA, Wolyn R, Rocher LL, et al. Acute renal failure after coronary intervention. *Am J Med*. 1997; 103: 368-375.
3. Merten GJ, et al. Prevention of contrast-induced nephropathy with sodium bicarbonate: a randomized controlled trial. *JAMA*. 2004; 291: 2328-2334.