

PROPHYLAXIS AGAINST CONTRAST NEPHROPATHY

Contrast Agents and Acute Renal Failure

Many studies looking at strategies to minimize and prevent contrast-induced nephropathy – optimal strategy have not been defined. Basic and common sense approach should include

- a) identifying at risk patients (ie those with who have pre-existing chronic renal disease or acute renal failure/impairment or rapidly deteriorating renal function)
- b) performing contrast studies only if clinically indicated and expected to confer significant benefit to patient. Consider alternative methods of investigation if possible
- c) ensure adequate fluid hydration
- d) avoiding other concurrent nephrotoxic agents eg aminoglycosides if possible.

2 additional strategies used in this ICU include:-

N-acetylcysteine

- Recent studies shows prehydration and N-acetylcysteine may lower the incidence contrast induced nephropathy. Dose is oral 600 mg BD, 2 doses pre- and 2 doses post-contrast.
- We have also been giving IV instead of oral N-acetylcysteine for patients who are under total bowel rest, or if we run out of time. Dose IV is still arbitrary – refer to on-call consultant
- A common regimen used in this ICU is to give 1.2 g N-acetylcysteine diluted in 250 mls of 5% dextrose and infused intravenously over 1 hour before the contrast study, then consider repeating one more dose after the study

Sodium Bicarbonate (PWH protocol)

- Add 80mls of 8.4% sodium bicarbonate into one 500 mls bottle/bag of Dextrose 5% (to achieve a sodium concentration of approximately 138 mmol/L, total volume of 580mls)
- Infuse at a rate of 3ml/kg/hr one hour before contrast study, followed by 1 ml/kg/hr for the next 6 hours during and after the procedure

We leave the choice of using N-acetylcysteine AND/OR sodium bicarbonate to the clinician.

If you choose to use both strategies simultaneously, then the resultant volume of infused fluid would be a protective strategy in itself against contrast nephropathy. However, the clinician has to consider the potential adverse effects of volume overloading in susceptible patients.