



Renal & Hypertension Service St George & Sutherland Hospitals

PREVENTION OF CONTRAST-INDUCED NEPHROPATHY (CIN)

Definition:

- Iatrogenic acute kidney injury (AKI) associated with use of contrast media
- Rise in Creatinine_{serum} of $\geq 44 \mu\text{mol/L}$ (or a 25%) increase from baseline assessed at 48 hours post contrast load

Clinical Features:

- Renal failure is usually non-oliguric
- Permanent loss of renal function is common
- Dialysis is required in <1% (except in high risk populations)
- Associated with significant increase in morbidity, hospital stay, and mortality

Estimating GFR for assessment if CIN risk:

- Estimated glomerular filtration rate (eGFR) is usually available on the electronic medical record pathology results
- If the eGFR isn't available, use the online calculator available at:
<http://kidney.org.au/health-professionals/detect/calculator-and-tools>

Preventative Strategies **Without** a Strong Evidence Base:

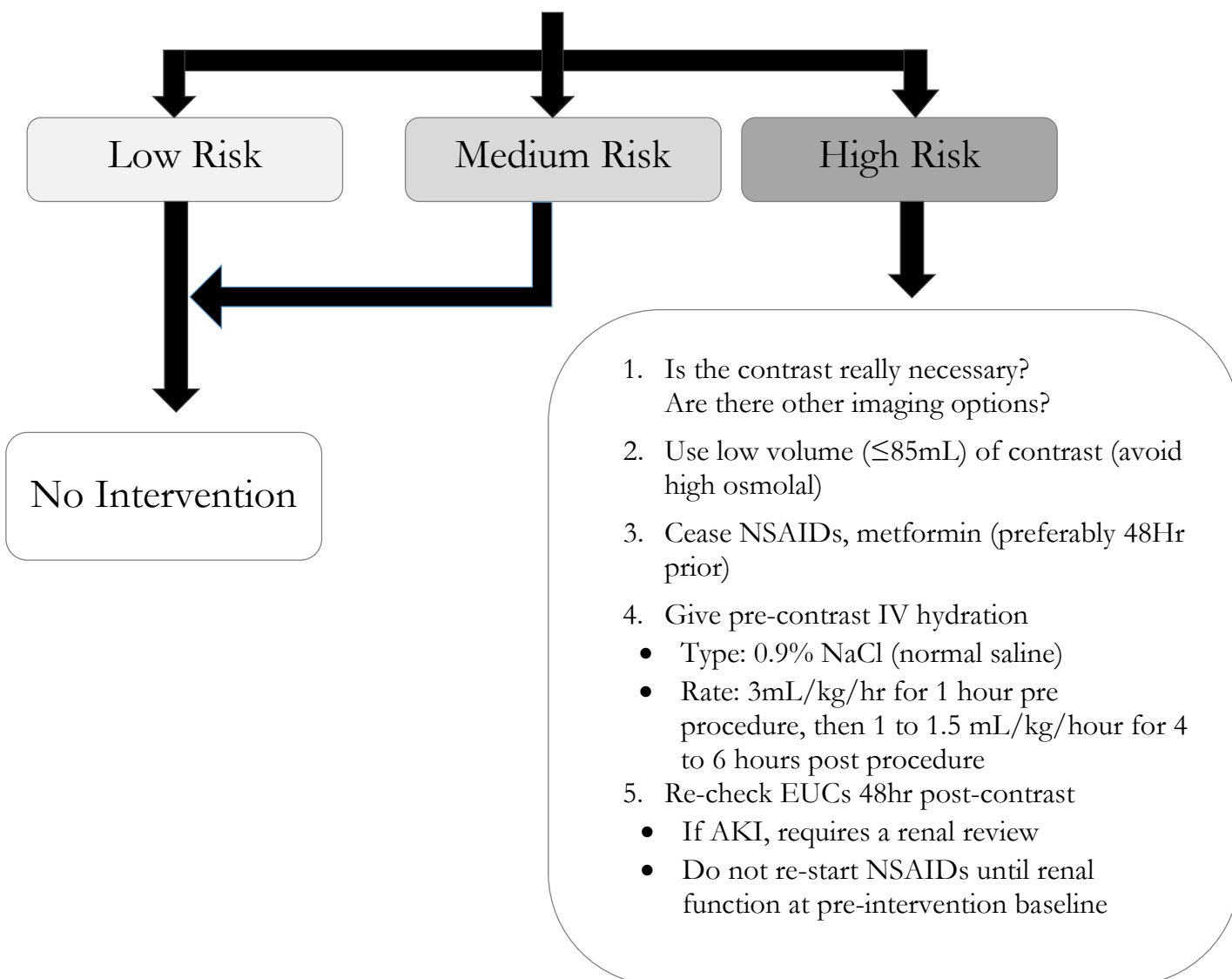
- Oral hydration with water alone
- Sodium bicarbonate or N-acetylcysteine (NAC)
- Theophylline, atrial natriuretic peptide (ANP), nifedipine, captopril, fenoldopam, dipyrnidole, mannitol, frusemide, ascorbic acid



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Assess CIN Risk

eGFR > 60 mL/min	Low Risk	<1%
eGFR 45-59.9 mL/min	Medium Risk	10%
eGFR 25-44.9 mL/min OR eGFR 45-59.9 mL/min + ≥ 1 high-risk comorbidity	High Risk	40%
eGFR <25 mL/min	High Risk	50%
High risk comorbidities	AKI prior to contrast load, multiple contrast studies, the frail or elderly, heart failure, liver failure, diabetes mellitus (Type 1 or Type 2), multiple myeloma, proteinuria (urine albumin/creatinine more than 30 mg/mmol or more than 300 mg/d of albuminuria)	





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SELECTED REFERENCES

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4. Weisbord SD, et al. Prevention of contrast-induced AKI: a review of published trials and the design of the prevention of serious adverse events following angiography (PRESERVE) trial. *Clin J Am Soc Nephrol.* 2013 Sep;8(9):1618-31.
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