

## Contrast-Induced Nephropathy Prophylaxis

### Risk Factors

- Chronic kidney disease (adults with an **eGFR less than 40** ml/min/1.73m<sup>2</sup> are at particular risk)
- Diabetes Mellitus with CKD 3B or lower
- Heart failure
- Renal transplant
- Age 75 years or over
- Hypovolaemia
- Increasing volume of contrast agent
- Intra-arterial administration of contrast agent

### Recommendations

1. Non-essential nephrotoxic medications such as NSAIDs should be discontinued at least 48 hours prior to angiography / PCI.
2. Withhold metformin after angiography / PCI until renal function has been assessed and found to be acceptable.
3. Consider temporarily stopping diuretics, ACE inhibitors and ARBs for 24 hours before and after angiography / PCI in patients with an eGFR less than 40.
4. All patients with an eGFR less than 40 should receive intravenous hydration before and after angiography / PCI:

### **Sodium chloride 0.9% (1ml/kg/hr) for 12 hours before and 12 hours after procedure**

Exact hydration should be customised on an individual basis taking account of fluid balance and left ventricular function.

### References:

1. NICE Clinical Guideline 169. Acute kidney injury Prevention, detection and management up to the point of renal replacement therapy. August 2013. <http://guidance.nice.org.uk/CG169>
2. Lewington A, MacTier R, Hoefield R, et al. on behalf of The Renal Association, British Cardiovascular Intervention Society and The Royal College of Radiologists. Prevention of Contrast Induced Acute Kidney Injury (CI-AKI) In Adult Patients. [http://www.renal.org/docs/default-source/guidelines-resources/joint-guidelines/Prevention\\_of\\_Contrast\\_Induced\\_Acute\\_Kidney\\_Injury\\_CI-AKI\\_In\\_Adult\\_Patients.pdf](http://www.renal.org/docs/default-source/guidelines-resources/joint-guidelines/Prevention_of_Contrast_Induced_Acute_Kidney_Injury_CI-AKI_In_Adult_Patients.pdf) [accessed 17.01.14]
3. The Faculty of Clinical Radiology / The Royal College of Radiologists. Metformin: updated guidance for use in diabetics with renal impairment. June 2009. [https://www.rcn.org.uk/\\_data/assets/pdf\\_file/0011/258743/BFCR097\\_Metformin.pdf](https://www.rcn.org.uk/_data/assets/pdf_file/0011/258743/BFCR097_Metformin.pdf) [accessed 12.5.15]