Contrast Induced Nephropathy: Protecting Kidneys, Protecting Lives

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Background

- Diagnostic radiographic scans using iodinated contrast media are an important part of clinical management, yet not without complications.
- In 2014, the regional radiology taskforce recommended a new kidney protective policy/guideline which includes screening, stratifying, and administering intravenous hydration to patients at high risk for contrast induced nephropathy (CIN).
- Patients with vascular disease have multiple risk factors for CIN and often require repeat radiographic scans using iodinated contrast for diagnosis, treatment, and surveillance purposes.
- Prior to project, no standardized care in place; preventive strategies inconsistent and underutilized.

Purpose

- The purpose of this project is to evaluate staff adherence to a best practice policy/guideline using a retrospective chart review, at a vascular outpatient clinic in a tertiary Medical Center.

Guideline for Implementation

**Intravenous Iodinated Contrast Media Screening Procedures**

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Findings

- **Patients Screened and Hydrated (n=62)**
  - IV Contrast image ordered by vascular provider: 60 (96.8%)
  - IV hydration required: 62 (100%)
  - IV hydration given: 40 (64.5%)
  - Pre-image labs obtained: 62 (100%)
  - Post-image labs obtained: 46 (74.2%)
  - Used electronic order set: 39 (62.9%)
  - Follow up visit vascular clinic: 62 (100%)

- **Complications from IV Hydration (n=40)**
  - BP complications: 11 (27.5%)
  - Anxiety/restless: 6 (15%)
  - Diaphoresis: 3 (7.5%)
  - Shortness of breath: 3 (7.5%)
  - Dizziness: 1 (2.5%)
  - Tachycardia: 1 (2.5%)
  - Other (hunger): 1 (2.5%)

Specific Project Aims

- What are the characteristics of outpatients at high risk for CIN?
- Were the pre and post IV hydration protocols ordered and implemented to high risk patients?
- Were there any pre and post protocol complications?

Frame of Reference

- Per guideline, all outpatients (100%) had pre-laboratory screening, risk stratifications, and follow up care.
- Most patients (64.5%) who required the IV hydration protocol, received the protocol.
- Outpatients who received the IV hydration protocol experienced only a few self-limited adverse effects (27% with elevated BP), none required treatment or admission.

Implications for Practice

- CIN remains the 3rd leading cause of acute kidney injury and is associated with a higher one year mortality.
- Adhering to a guideline on the use of iodinated contrast can lead to standardized care and support preventive strategies.
- Continuing efforts aimed at reducing the risks of CIN are the main challenges for protecting kidneys, protecting lives.

Adapted from: "The ABCs of AKI: From Pathogenesis to Practice"