

Reducing the Incidence of Contrast-Induced Nephropathy (CIN)

Scope of the Problem: In NNE, CIN occurs following 6.4% of PCIs and is associated with a longer hospital stay, increased in-hospital mortality, and poorer long-term survival.

Goal: Our goal is to reduce the incidence of contrast-induced nephropathy following diagnostic cardiac catheterization and PCI. The NNECDSG believes there are opportunities during the procedural hospitalization to reduce a patient's risk of developing CIN.

Strategies:

1. Insure adequate pre-procedure hydration of all patients; routinely identify high risk patients; minimize use of nephrotoxic drugs; pre-treat high risk patients with N-acetylcysteine and consider using an IV sodium bicarbonate protocol and/or pre-procedure dialysis; routinely calculate and communicate maximum acceptable contrast dose; use non-ionic and low- or iso-osmolar contrast; routinely consider staging complex procedures in high-risk patients; insure adequate post-procedure hydration
2. Move from menu-driven standing order sets (pre- and post-procedure) towards standing order sets with more forcing functions
3. Add to the standard readiness for procedure documentation the predicted risk of CIN and the maximum acceptable contrast dose
4. Standardize the collection of post-procedure CR
5. Add to the data collection pre-treatment variables (NAC, bicarbonate, dialysis), contrast type, contrast volume, and include in the quality improvement report

Activities:

1. Standing order sets have been obtained from each institution and reviewed.
2. There is acceptance of the importance of hydration and NAC. Nurses and physicians have brainstormed how to more systematically insure adequate hydration.
3. A DHMC nephrologist has been enlisted as a collaborator
4. The proposed new data collection tool (NCDR Cath/PCI V4) will capture the new data elements

Progress:

1. The completeness of the post-PCI CR collection has improved from 64.6% in 2006 to 74.5% in 2007.
2. A CIN Quality Report is now part of the standard PCI Report
3. A plenary session on CIN has been scheduled for the 10/2-3/2008 meeting.