

PREVENTION OF CONTRAST NEPHROPATHY: ARE PRACTICE PATTERNS CONGRUENT WITH CURRENT RECOMMENDATIONS?

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Administration of N-acetylcysteine (NAC) and isotonic sodium bicarbonate infusion (NaHCO₃) have received significant attention for preventing Contrast Nephropathy (CN). However, given the limited evidence, experts recommend their usage only in patients at high risk for CN. The present study evaluates congruency of clinical practice with existing evidence.

A retrospective analysis of 112 consecutive patients from two academic institutions who underwent percutaneous coronary intervention (PCI) was performed. Patients undergoing primary PCI, dialysis, or contrast exposure within one week of PCI were excluded. Demographic, laboratory data and periprocedural PCI details were abstracted. We calculated CN risk score for patients using Mehran's prediction model and stratified them as low (score ≤ 15) and high (≥ 16) risk for CN. We studied utilization of NAC and NaHCO₃ as preventive strategies for CN for these two categories of patients and compared clinical practice with current evidence. Chi square test was used to detect significant differences for a p value of less than 0.05.

Of 112 patients 94 (89%) and 18 (16%) were at low and high risk for CN respectively. Among the low risk patients, 40 (43%), 23 (24%) and 16 (17%) received NAC, NaHCO₃ and both for prophylaxis respectively. Only 7 (7%) did not receive prophylaxis. Among the high risk patients, 15 (83%), 3 (17%) and 1 (7%) received NAC, NaHCO₃ and both as prophylaxis respectively. One patient from high risk group (7%) did not receive any prophylaxis. Overall more than 50% of low risk patients and 95% of the high risk patient received either NAC or NaHCO₃. Use of NAC was significantly higher among high risk as compared to low risk patients ($p=0.002$) but use of NaHCO₃ was not ($p=0.55$).

Despite lack of clear evidence, use of prophylactic agents appears to be high including for those patients who are at low risk for CN. NAC is more commonly used than NaHCO₃ for this indication especially in high risk patients whereas NaHCO₃ use is similar between the two risk groups.