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A Simple Risk Score For Prediction of  
Contrast-Induced Nephropathy  
After Percutaneous Coronary Intervention  
Development and Initial Validation

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CIN (Contrast-Induced Nephropathy) Definition:

- $\uparrow \geq 25\%$  and/or  $\geq 0.5$  mg/dL in serum creat. @  
48 hrs. post-cath vs. baseline

n = 8357 patients

5571  $\rightarrow$  Development Dataset

2786  $\rightarrow$  Validation Dataset

Exclusions:

- ① Pre-existing ESRD requiring HD
- ② Other contrast exposure w/in 1 week or less
- ③ PCI for an acute MI
- ④ Shock

Study Protocol:

- Pre-PCI Hydration:

- 1 mL/kg/hr  $\frac{1}{2}$  NS  $\times$  4-12 hrs. pre-cath  
and 18-24 hrs. post-cath

- Aspirin 325 @ least 24 hrs. pre-cath then indef.

- Either Plavix 75 QDay or Ticlopidine 250 BID  
 $\times$  4 wks. post-cath

16 Total variables Assoc. w/  $\uparrow$  Risk of CIN:

- |                          |                             |                |
|--------------------------|-----------------------------|----------------|
| ① Chronic Kidney Disease | ⑧ PVD                       | ⑮ Dyslipidemia |
| ② CHF                    | ⑨ Females                   | ⑯ Contrast amt |
| ③ Hypotension            | ⑩ HTN                       |                |
| ④ IABP                   | ⑪ Past CVA                  |                |
| ⑤ Anemia                 | ⑫ Contrast Type (Ioxaglate) |                |
| ⑥ Age $\geq$ 75 yrs.     | ⑬ Multivessel Dis.          |                |
| ⑦ Diabetes               | ⑭ Acute Coronary Syndrome   |                |

-Risk Assessment:

- ① Hypotension 5 points  
 - SBP < 80 x 1 hr. requiring inotropes  
 or IABP w/in 24-hrs. of procedure
- ② IABP 5 points
- ③ Age > 75 yrs. 4 points
- ④ Anemia 3 points  
 - Baseline < 39% (men)  
 < 36% (women)
- ⑤ Diabetes Mellitus 3 points
- ⑥ Contrast volume 1 point/100cc<sup>3</sup> of contrast
- ⑦ Serum creatinine > 1.5 mg/dL EGFR (40-60) - 2 points  
 or EGFR < 60 mL/min EGFR (40-20) - 4 points  
EGFR (< 20) - 6 points
- ⑧ CHF (NYHA Class II or IV) 5 points

Risks:

<u>Score</u>	<u>CIN Risk</u>	<u>H/D Risk</u>
≤ 5	7.5%	0.04%
6-10	14.0%	0.12%
11-16	26.1%	1.09%
≥ 16	57.3%	12.6%