

## **Risk scoring system to predict contrast induced nephropathy following percutaneous coronary intervention**

Suma M. Victor, Anand Gnanaraj, VijayaKumar S., Rajendra Deshmukh, Mani Kandasamy, Ezhilan Janakiraman, Ulhas M. Pandurangi, K. Latchumanadhas, Georgi Abraham, Ajit S. Mullasari

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### **Abstract**

**Background:** Contrast induced nephropathy (CIN) is associated with significant morbidity and mortality after percutaneous coronary intervention (PCI). The aim of this study is to evaluate the collective probability of CIN in Indian population by developing a scoring system of several identified risk factors in patients undergoing PCI.

**Methods:** This is a prospective single center study of 1200 consecutive patients who underwent PCI from 2008 to 2011. Patients were randomized in 3:1 ratio into development (N= 900) and validation (n =300) groups. CIN was defined as an increase of 25% and/or 0.5 mg/dl in serum creatinine at 48 hours after PCI when compared to baseline value. Seven independent predictors of CIN were identified using logistic regression analysis - amount of contrast, diabetes with microangiopathy, hypotension, peripheral vascular disease, albuminuria, glomerular filtration rate (GFR) and anemia. A formula was then developed to identify the probability of CIN using the logistic regression equation.

**Results:** The mean ( $\pm$  SD) age was 57.3 ( $\pm$  10.2) years. 83.6% were males. The total incidence of CIN was 9.7% in the development group. The total risk of renal replacement therapy in the study group is 1.1%. Mortality is 0.5%. The risk scoring model correlated well in the validation group (incidence of CIN was 8.7%, sensitivity 92.3%, specificity 82.1%, cstatistic 0.95).

**Conclusion:** A simple risk scoring equation can be employed to predict the probability of CIN following PCI, applying it to each individual. More vigilant preventive measures can be applied to the high risk candidates.

