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RISK SCORE FOR PREDICTION OF CONTRAST INDUCED NEPHROPATHY IN HAN CHINESE UNDERWENT PERCUTANEOUS CORONARY INTERVENTION

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Objectives To develop a simplified risk score of contrast induced nephropathy (CIN) after percutaneous coronary intervention (PCI) for Han Chinese.

Methods A retrospective study was performed on 1500 patients for the development dataset, who had undergone PCI from January 2008 to May 2010. And one thousand patients treated in the same period were selected for the validation set. Logistic regression analysis was applied to identify risk factors for CIN. Based on the OR, the sum of the integers was a total risk score for each patient.

Results (1) Among the 1500 patients, CIN occurred in 246 patients and the overall incidence of CIN was 16.4%. (2) Eleven identified variables were identified as risk factors for CIN (with weighted integer): diabetes (3 score), hypotension (3 score), Left ventricular ejection fraction (LVEF$\leq$45%) (3 score), eGFR $<$60 ml/min/1.73 m^2 (3 score), age$>$70 years (2 score), myocardial infarction (2 score), emergency PCI (2 score), anaemia (2 score), decreased high-density lipoprotein (HDL) concentration ($<$1 mmol/l) (2 score), contrast agent dose of $>$200 ml (2 score), low permeability contrast agent (1 score). (3) The sum of the integers was a total risk score for each patient. The incidence of CIN was 5.2% in low risk group ($\leq$4), 13.6% in the moderate risk group (5–10), 32.3% in the high risk group (11–14) and 59.0% in the very high risk group ($\geq$15). (4) The model demonstrated good discriminative power in the validation population, showing that the increasing risk score was strongly associated with CIN (c-statistic$=$0.82).

Conclusions This simple scoring system proposed here provides a good estimate of the risk of CIN after PCI for Han Chinese. This risk score can be used for the prevention and treatment of CIN.