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Prediction Model of Acute Kidney injury in Patients with Acute Pesticide Poisoning

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Objectives : Acute kidney injury is associated with mortality in acute pesticide poisoning. Currently, tools to predict AKI events in pesticide poisoning are lacking. We suggested the scoring system for early detection of AKI in these populations.

Methods : This study was a retrospective observational cohort study with 758 patients with acute pesticide poisoning by intentional poisoning. We divided this population into a ratio of 7:3; training set (n = 530) and test set (n = 228) for model development and validation. Multivariable logistic regression models were used in developing a score-based prediction model.

Results : A total of 93 (12.3%) AKI were developed within 7 days after hospital visit, and majority of AKI events were occurred within 2 days (n = 76). AKI prediction scoring system included a summation of the integer scores of the following five variables; pesticide category, body temperature, Glasgow Coma Scale, serum albumin, and bicarbonate. The developed scoring system predicted AKI accurately (AUC 0.726 in train set, and AUC 0.709 in test set).

Conclusions : The developed scoring system showed good performance in predicting AKI in patients with pesticide poisoning. Early detection of AKI in patients with pesticide poisoning will help improve patient outcomes.