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Assessment of Clinical Scoring Systems to Predict the Outcome of Patients sith Acute Organophosphorus Poisoning

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OBJECTIVE: This study aimed to determine the relationship between individual scores and mortality rate which will be helpful to provide early interventions in selective cases of acute organophosphate (OP) poisoning.

METHODS: This is a hospital-based observational study of 63 adult patients of OP poisoning who presented with acute cholinergic crisis. The performance of International Program on Chemical Safety Poison Severity Score (IPCS PSS), Peradeniya Organophosphorus Poisoning (POP) Scale and Glasgow Coma Scale (GCS) were evaluated. Clinical history, socio-demographic and relevant data, risk factors and outcomes were recorded. Receiver operating characteristics (ROC) curve was generated and the area under the curve (AUC) was calculated for short-term outcome. Logistic regression model was fitted for each of the clinical scoring systems.

RESULTS: The mean age of the patients was 28.4 ± 10.23 years. The most common OP ingested was chlorpyrophos (30.2%). Gastric lavage was given to 77.8% of the admitted patients. 81% of patients remained in hospital for 1-3 days and the majority (87.3%) of patients recovered and were discharged. Overall mortality rate was 7.9%.

The AUC for mortality was significantly higher for POP (0.840) than IPCS PSS (0.741). On logistic regression analysis, POP can identify 92.1% cases correctly. The performance of POP scale is considered satisfactory (p=0.005). IPCS PSS and GCS appear to be less effective at predicting an individual's poor outcome.

CONCLUSION: In acute OP poisoning, POP scale outperforms IPCS PSS and GCS. Thus POP scale can be reliably used to assess the outcome and mortality of patients with acute OP poisoning.