The Role of Some Laboratory Parameters as Indicators of Severity in Acute CholinesteraseInhibitor Insecticides Poisoning

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Summary

Cholinestrase inhibitor insecticides poisoning is considered a severe clinical entity and causes considerable morbidity and mortality. Patients need continuous monitoring for the clinical severity especially the old age patients.

Severity of poisoning can be evaluated simply by using PeradyniaOrganophosphorusPoisoning score (POP score), it facilitates the categorization of severity state of the patients and prediction the outcome of the case.

The aim of this work was to study the possible role of Creatine Phosphokinase (CPK), Amylase, Lactate Dehydrogenase (LDH), C-Reactive Protein(CRP) and glycemic status in predicting the severity of acute cholinesterase inhibitor insecticides poisoning.

A prospective cross-sectional study was carried out at Poison Control Center of Ain Shams University hospital (PCC-ASU) including 150 patients admitted in the PCC with acute cholinesterase inhibitor insecticides toxicity, they were selected according to the predetermined criteria.

According to POP score, 41.3% of patients were mildly intoxicated, 31.3% were moderately intoxicated and 27.3% were severely intoxicated. The mean age of the studied patients was 29.9 ± 12.3 years. Females were more affected than males and patients from urban areas were more than rural areas.

The patients were intoxicated with organophosphorus compounds (OPCs) more than carbamates. Exposure was suicidal in most of the patients through the oral route.

39.3% of patients were admitted in the ICU and 59.3% of them needed mechanical ventilation. Deaths constituted 12.7% of all studied patients.

Severity of poisoning according to POP score was significantly positively correlated with ICU admission, need for MV, hospital stay duration, total atropine dose and death. However, there was no significant correlation between severity and delay time.

Significant negative correlation was noticed between pseudocholinestrase level and severity, ICU admission, the need for MV and mortality; meanwhile significant positive correlation was noticed between CPK, Amylase, LDH, CRP and RBS and severity, ICU admission, the need for MV and mortality.

CPK, Amylase, LDH, CRP and RBS have high sensitivity and specificity compared to pseudocholinestrase in detection of severity of poisoning and outcome of patients, so they can be used as prognostic tools in cholinesterase inhibitor insecticides poisoning.

Amylase had the highest sensitivity and specificity among all parameters in predicting the need for MV and mortality so it can be used as indicator of respiratory failure and the need for MV in acute cholinesterase inhibitor insecticides poisoning.