ACUTE TOLUENE INTOXICATION – CLINICAL PRESENTATION AND MANAGEMENT

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Objective: to characterize clinical characteristics, laboratory abnormalities, and management in acute toluene intoxication.

Methods: We retrospectively analyzed the toluene exposure cases reported to Ramathibodi Poison Center (RPC) Toxic Exposure Surveillance System during 2013-2015. Missing data were not included in analysis.

Results: There were totally 48 cases consulted to RPC; predominately male (43 cases, 89.6%) with median age of 29 years (range 11 months – 79 years). The common clinical presentation were alteration of consciousness (30 cases, 62.5%), dyspnea (14 cases, 29.6%), vomiting (11 cases, 22.9%) and fever (6 cases, 12.5%). There were 4 cases (8.3%) reported to have seizure, and 2 cases reported to have proximal muscle weakness (4.2%). One case presented with cardiac arrest.

Common laboratory result abnormalities were metabolic acidosis (24 of 28 cases, 85.7%), hypokalemia (15 of 31 cases, 48.4%), creatinine rising (8 of 23 cases, 34.8%). Four cases were reported to have pure normal gap acidosis (4 of 28 cases, 14.3%). Seventeen cases were reported to have mixed high gap and normal gap metabolic acidosis (17 of 28 cases, 60.7%).

Primary treatment was supportive and symptomatic treatment including electrolyte imbalance correction (9 cases, 18.1%). Eight cases (16.7%) were intubated. There were 2 deaths (4.2%), which were associated with severe metabolic acidosis and severe serum potassium imbalance (one with serum K 6.7 mEq/L, and another with serum K 2.9 mEq/L).

Conclusion: The hallmarks of acute toluene intoxication are alteration of consciousness, metabolic acidosis predominately mixed high gap with normal gap metabolic acidosis, and hypokalemia.