KSN 2018
Seoul, Korea · May 17 - 20

Abstract Type : Poster
Presentation No. : PAK 004

Renal effects of intentional self-poisoning with Chlorophenoxy herbicide [2-Methyl-4-chlorophenoxyacetic acid (MCPA)] – A case report

Thilini Wijerathna[1], Dhammika Dissanayaka[2], Anuradha Colombage[3], Indika Gawarammana[4]
[1]Department of South Asian Clinical Toxicology Research Collaboration, Faculty of Medicine, University of Peradeniya, Peradeniya, Sri Lanka
[2]Department of Pathology, Faculty of Medicine, University of Peradeniya, Peradeniya,, Sri Lanka
[3]Department of General hospital, Peradeniya, Sri Lanka
[4]Department of Medicine, Faculty of Medicine, University of Peradeniya, Peradeniya,, Sri Lanka

Case Study: Nephrotoxicity due to pesticide self poisoning is common in developing countries. Poisoning with Chlorophenoxy herbicide [2-Methyl-4-chlorophenoxyacetic acid (MCPA)] has been associated with acute kidney injury and high case fatality of up to 11%. We report a patient with renal effects of MCPA.

A 40-year-old man was transferred to teaching hospital Peradeniya, Sri Lanka 2 hours after MCPA ingestion. On day 2 he had serum creatinine level of 1.56 mg/dl that increased till day 3 and gradually decreased to 1.05 on day 8. Increased serum creatine kinase was seen on day 2 (3835 U/L) and peaked on day 3 (11480), gradually decreased to 1506 U/L by day 8. Serum Ca^{2+} level was <0.1 mmol/l on day 2 and remained below the normal range till day 5. Low serum K^{+} level was noted from day 2 (3.52 mmol/l) and lowest level of 2.1 was seen on day 3 despite KCl replacement. After day 5, serum K^{+} gradually improved. Mild elevation of serum magnesium was noted on day 5. Serum lactate level was high from day 1 and remained above the normal range till day 4. Patient showed low serum HCO^{3-} persistently till day 5 even with intravenous bicarbonate treatment. Blood pH remained normal throughout, however, urine pH was acidic from day 1 (5.5) and became normal on day 8. His urine volume and colour remained normal. In addition to the renal effects he showed evidence of gastrointestinal, pulmonary, cardiac, central nervous system and metabolic effects. Patient required mechanical ventilation and made a complete recovery.

Renal effects of intentional self-poisoning with MCPA can be due to Rhabdomyolysis or renal tubular injury as the uncoupling of oxidative phosphorylation that leads to decreased mitochondrial respiration and ATP depletion. As laboratory assays on tubular biomarkers were not available in our hospital, tubular damage was not confirmed.