Pathophysiology of Organ Dysfunction in Cleistanthus Collinus (Oduvanthalai) Poisoning

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Introduction : Cleistanthus collinus poisoning is a common and lethal method of deliberate self-harm in South India. The mechanisms underlying organ dysfunction in this poisoning are not well understood and are investigated in this study. **Methods :** Patients admitted with Oduvanthalai poisoning over 17 months were prospectively evaluated from admission to discharge using a standardized protocol. **Results :** Of 20 patients with Oduvanthalai poisoning the mean age was 27, male female ratio 2:3 and mean time from ingestion to admission was 22 hours (3-96 hours). The admission clinical features were symptoms of vomiting (80%), breathing difficulty (40%), headache (20%), giddiness (30%) and weakness (25%) and signs were hypotension (5%), abdominal tenderness (20%), tachypnoea (20%) and crepitations (15%). The laboratory abnormalities identified were metabolic acidosis (100%), hypokalemia (50%) and renal failure (15%). Metabolic acidosis occurred in all patients and persisted throughout hospitalization. The presence of metabolic acidosis along with hypokalemia and urinary pH > 5 are indicative of renal tubular acidosis. The metabolic disturbances varied in severity from: metabolic acidosis (100%), metabolic acidosis and hypokalemia (50%) and metabolic acidosis, hypokalemia and renal failure (20%). 20% of patients developed ST depression, however there were no cases of cardiac dysarrythmias. Three patients developed hypoxia probably due to ARDS. 19 patients required potassium correction with a mean of 297 mEq of Potassium chloride (13-865 mEq). 17 patients underwent temporary transvenous pacing. The three patients who died (15%) were admitted > 48 hours after ingestion and had developed combinations of severe hypokalemia, renal failure, shock and ARDS. Patients who consumed fresh leaves (10) had a remarkably uncomplicated course in contrast to patients who consumed boiled decoction (10), 30% of whom died. **Conclusion :** Oduvanthalai poisoning induces a reversible renal injury involving glomerular filtration and tubular dysfunction. This pathophysiology may play a critical role in life threatening organ dysfunction associated with this poisoning. The role of acidosis correction, renal protective therapy and haemodialysis needs to be evaluated in Oduvanthalai poisoning.