

Clinico-Epidemiology of Brake Fluid Poisoning

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Brake oil is an automobile transmission fluid composed of mainly ethylene glycol. It is a toxic alcohol used also in antifreeze, coolants, preservatives, and chemical solvents. Its poisoning causes multi-organ involvement including depression of the central nervous system (CNS), acute kidney injury (AKI), myocardial infarction (MI), and respiratory failure. The objectives of this study were to describe the epidemiology and clinical features of brake fluid poisoning. This was a prospective observational clinical study of a series of 25 patients with brake fluid poisoning admitted to Teaching Hospital Ratnapura where the study was conducted over 6 years commencing from January 2018. All patients with a history of brake oil ingestion were included in to study (a purposive sampling) and each patient was examined daily. Data were collected using an interviewer-administered questionnaire and the analysis was done using SPSS version 21. There were 25 patients of which 24 (96%) had intentional poisoning and 1 (4%) had accidental poisoning. There were 22 (88%) males and 3 (12%) were females. Their age ranged from 19 to 75 years (mean 30.3±8). Nineteen (76%) were married. Their occupations were: 8 (32%) of drivers, 5 (20%) of manual laborers, 4 (16%) of gem miners, and 2 (8%) of masons. Twenty-one (84%) were alcoholics and the ingested volume ranged from 2 mouth slips to 300 mL. The average hospital stay was 4 days (IQR 3-5). Thirteen patients (52%) had nausea, vomiting, and epigastric pain. Five (20%) had AKI from which haemodialysis was performed to 4 (16%). Cardiac effects were observed in 5 (20%) which included hypotension in 4 (16%), bradycardia in 2 (8%), ventricular ectopic in 1 (4%), and ST elevation MI in 1 (4%). Metabolic acidosis was observed in 7 (28%) and CNS depression was found in 5 (20%). Six (24%) had hypocalcaemia. Four patients (16%) died and 4 (16%) were treated at the intensive care unit. Brake fluid is a deadly poisoning agent and its poisoning causes multi-organ failure.

Keywords: Poisoning, Brake Oil, Ethylene Glycol, Acute Kidney Injury, Sri Lanka