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Amlodipine overdose management with Intravenous Lipid Emulsion: a case report

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Objective: To report a case of amlodipine overdose treated with intravenous lipid emulsion.

Case summary: A 26 year-old male with history of hypertension presented in emergency department of Tribhuvan University Teaching Hospital 2.5 hours after ingestion of 70 tablets of Amlodipine (2.5 mg each=175 mg in total). Initially 28 tablets were ingested under the influence of alcohol; few minutes later remaining tablets were taken as suicidal intent due to fear of being alive with organ damage and terminal illness as an effect of drug overdose. On presentation, the patient was feeling drowsy, burning sensation in abdomen, redness in eyes. On examination, his airway, breathing and circulation were maintained, Glasgow Coma Scale score 15/15, heart rate 98 beats/min, blood pressure 100/70 mmHg, temperature 98.2 ^{o}F, SpO_2 94%, pupil size was normal and bilaterally reactive. Quantities ingested were confirmed by his wife who reported empty strips of amlodipine tablets in their usual place. After initial assessment, intravenous fluid was started; gastric lavage was done. On further evaluation, there were no signs of pallor, icterus, cyanosis and edema. Lung fields were clear with bilateral equal air entry. Cardiac examination found normal heart sound without any murmur. Simultaneously, intravenous thiamine 200 mg, intravenous MgSO4 2 g & intravenous 10 ml of 10% Calcium gluconate over 10 minutes were given. BP was continuously monitored to maintain mean arterial pressure >65mmHg. As no antidotes were available, anticipating future consequences due to overdose as half-life of amlodipine is 30-50 h, we administered 20% intravenous lipid emulsion 100 ml (at 1.5mL/kg) over 10 minutes followed by 100 ml per hour for the next 2 hours. His initial baseline investigations (electrocardiogram, hemogram, liver function test, renal function test, coagulations) were unremarkable. Arterial blood gas analysis was normal and no abnormality detected in chest X-ray. After initial management, continuous cardiac monitoring was performed in intensive care unit for 2 days. Treatment course was uneventful with favorable outcome.

Conclusion: Careful monitoring is required following a massive amlodipine overdose and treatment includes early gastric decontamination, resuscitation and other supportive cares. There are no existing data supporting pre-emptive intravenous lipid emulsion and the risk-benefit of this approach is unknown.