

# **METABOLIC ACIDOSIS, HYPEROSMOLAITY, AND ACUTE KIDNEY INJURY ASSOCIATED WITH PROPYLENE GLYCOL TOXICITY SECONDARY TO LORAZEPAM INFUSION**

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A 54-year-old white male with a history of multiple admissions for alcohol intoxication was admitted with right flank pain. A CT scan revealed a small right psoas hematoma which was managed conservatively. He developed alcohol withdrawal seizures after 2 days and started on high dose infusion of lorazepam (LZ) and transferred to ICU. On hospital day 8, he developed severe metabolic acidosis (pH 7.11), hyperosmolality (Osmolal gap of 145mmol/Kg) and acute kidney injury followed by intubation and mechanical ventilation. The patient was suspected of having propylene glycol (PG) toxicity secondary to prolonged infusion of LZ (11 mg/hour averaged over 6 days), which got stopped immediately.

PG is commonly used as a solvent in many drugs including LZ. Hyperosmolality, metabolic acidosis and AKI are classic signs of PG toxicity. The agent is generally safe in low doses, but large doses can be toxic, particularly if they are given over a short period of time. The treatment of choice in PG toxicity is HD. The patient underwent emergency HD once PG toxicity is suspected. The diagnosis was confirmed by a high serum PG level (790 mg/dl) before the first dialysis session . Daily HD was continued for the next 4 days. As osmolal gap correlates closely with serum PG level, the patient's daily osmolal gap was monitored in order to estimate PG decay. After the second dialysis session, his osmolal gap had improved to 39 mmol/kg. Patient gradually showed clinical and metabolic recovery and got discharged after a week.

Lab Data	Day 7	Day 8a	Day 9	Day 10	Day 11
BUN (mg/dl)	6	12	11	13	11
S. Cr (mg/dl)	0.9	2.2	1.5	0.9	0.8
Anion Gap	10	14	10	6	5
Osmolal Gap	NA	145	39	25	12
S. bicarb(mg/dl)	23	13	22	26	27

a - patient started on hemodialysis