

Enemas can be fatal in Chronic Kidney Disease. An Overlooked Fact

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Background: Phosphate enemas are frequently used for treatment of constipation in hospitalized and out-patient settings. There are manufacturers and FDA warnings related to their potential harmful effects in selected high risk groups involving elderly frail patients, patients with bowel inflammations, chronic kidney disease (CKD) and those taking certain medications. Inconveniently, incidence of constipation is encountered much frequently in some of these groups. We are presenting a case where phosphate enema led to AKI and serious electrolyte shifts in a patient with CKD.

Case summary: 65 year old gentleman with stage IV CKD secondary to obstructive uropathy and renal stone disease was admitted with fracture neck of femur. On admission in surgery, his workup showed Creatinine 3 mg/dl, Ca 8.5 mg/dl, Phosphorous 5.2 mg/dl, Serum bicarbonate 15.9 mmol/L, Sodium 136 mmol/L, Potassium 4.7 mmol/L. He developed subacute intestinal obstruction and was given two doses of klean enema (Phosphate enema) over 24 hours. Within few hours after the second dose, his condition deteriorated and he developed acidotic breathing, acute confusional state. Laboratory workup showed Urea 215 mg/dl, Creatinine 6.5 mg/dl, Serum bicarbonate 8.9 mmol/L, Calcium 4.4 mg/dl, Phosphorous 17.2 mg/dl , sodium 161 mmol/L, Potassium 2.5 mmol/L. He was managed with intensified daily hemodialysis with intensive supportive measures. Clinical and Lab parameters were much improved after 11 HD sessions with corrected Calcium of 8.9 mg/dl and phosphorous 4.5 mg/dl. His dialysis was subsequently stopped and he was kept under observation with a stable RFTs and biochemical profile.

Discussion: The hyperosmolar sodium phosphate based purgatives cause acute phosphate nephropathy by volume depletion, transient massive hyper-phosphatemia, chelation of calcium and precipitation of calcium phosphate in renal tubules. Once manifested, treatment is mainly supportive aimed at potentially fatal water and electrolyte shifts. Hospital staff, pharmacies, gastroenterology and surgical services should all be educated that the restraints and contraindications pertaining to phosphate enemas should be carefully reviewed in each patient. Strong caution must be exercised in patients with renal impairment where alternate preparations of enemas should be used after exhausting all safer non-pharmacological and pharmacological measures.