

HIBISCUS INDUCED NEAR FATAL HYPERKALEMIA IN A HEMODIALYSIS PATIENT

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INTRODUCTION

hyperkalemia remains a treatable and preventable cause of morbidity and mortality in end stage renal failure. Although, pseudohyperkalemia is the commonest cause and death is the alerting sign of this condition; effort should be directed towards avoiding its occurrence and recurrence in dialyzed patients.

Patients and Methods

This Eastern man of 65 year- old is hemodialyzed for the evolution of nephrosclerosis into end stage renal failure . He has history of type II diabetes mellitus diet controlled, arterial hypertension and hepatitis C positive antibody. He has no known allergies, does not smoke, drink alcohol, or use illicit drugs. He is the father of six girls and a unique 12 years old boy. He was initially refusing to start hemodialysis until the last past three years. He was dialyzed for the last time on Friday and the next session is scheduled for Monday. On Sunday night he presented to emergency department with a slurred speech, having right hemiparesis without any other sign of focalization, cerebellar neither extra pyramidal signs. His vital signs showed a blood pressure of 160/90mmHg for heart rate of 68 bpm, afebrile and having oxygen saturation=94%.Patient was conscious responding fully to verbal commands with exception of flaccid findings of right hemiparesis. The remaining physical examination is unremarkable .His left brachio cephalic fistula was well functioning laboratory work up showed bicarbonate level =22 mmol/l, chloride =96 mmol/l, sodium=139 mmol/l and potassium 10.3 mmol/l urea=22.7 mmol/l, creatinine 722 umol/l, fasting blood sugar=6.7mmol/ and plasma proteins= 64g/l. serum calcium =2.5 mmol/l, phosphorus= 2.03 mmol/ and alkaline phosphatase=211 ui/l (< 270). BNP =217 pg/ml (100-400), normal UstSH and intact PTH=447.6ng/l (15-65) with a 25 OH level =48.42 nmol/l (50-80). Arterial blood gas disclosed the following items: PH =7.375 (7.350-7.450), PCO2 = 43.9 mmHg (32-48), Po2= 85.6 mmHg (83-108), bicarbonate level =25.1 mmol/l, bases excess = - 0.3 and SaO2 =96.5%. In view of this severe hyperkalemia a second plasma sample was sent confirming the finding of potassium level at 9.8 mmol/l. Electrocardiogram was in favor of left ventricular hypertrophy, without ischemic changes neither conduction defect. Chest X-Rays and Computer tomography (CT) of the brain showed normal intracranial and sinus cavity appearances. This finding allowed us to rule out hemorrhagic process and to decide urgent hemodialysis. After two hours of dialysis the patient started feeling a net improvement of his condition. He was able to cry and recognized that he spent his week-end with friends whom recommended Hibiscus infusion aiming improvement of his kidney function and sexual competency.

Discussion

Hyperkalemia results from imbalance between three major pathophysiological patterns. First, increased potassium intake in the presence of renal impairment and either enzymatic defects or hypoaldosteronism hyporeninism conditions. Second, disturbed cellular uptake of potassium mainly drug induced. Third, pseudo hyperkalemia which is the commonest cause that has to be ruled out before confirming the non fastidious origin .Clinical significance depends upon variability of plasma osmolarity, hormonal other co-existing plasma cationic imbalance , acid-base status dysregulation and the manner of hyperkalemia onset: acute or chronic state , community or hospital acquired. Herein, solely Hibiscus infusion taken recently for theoretical virtue was found to be associated with neuromuscular blockage dominated by the clinical appearance evoking a cerebral vascular accident. Despite the acute onset of hyperkalemia , electrocardiogram(ECG) disclosed up feature of left ventricular hypertrophy without ischemic changes neither conduction abnormalities. Patients with acute increases in potassium concentration are more likely to experience ECG changes than those with chronically elevated potassium levels. By opposite to star fruit that is well known to cause neurotoxicity , Hibiscus might induce intractable hyperkalemia with better outcome after initiating hemodialysis. To the best of our knowledge, there have been no reports of hyperkalemia due to consumption of Hibiscus tea.

Conclusion

Several plants such as Hibiscus may precipitate hyperkalemia when ingested in excess by patient having underlying renal disease or other disturbances in potassium homeostasis. In some circumstances, removal of potassium excess is the only lifesaving .target.