A Case of Refractory Hypokalemia in Colonic Pseudo-obstruction (Ogilvie's Syndrome)

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INTRODUCTION

Hypokalemia has many causes including decreased intake, increased secretion/GI losses, renal losses/poor reabsorption, hereditary conditions, etc.

1. Ogilvie's syndrome or colonic pseudo-obstruction is characterized by acute dilatation of the colon in the absence of an obstructing anatomic lesion
2. Primary hyperaldosteronism is an uncommon cause of hypokalemia but should be considered in certain applicable cases
3. Multiple causes of hypokalemia can present in one patient and complicate treatment which is why it is important to maintain a broad differential.

DIAGNOSIS

Consider hyperaldosteronism work-up in:

- HTN and hypokalemia
- Resistant HTN (3+ medications)
- Adrenal incidentaloma + HTN
- Age of onset HTN < 30
- Any suspicion of secondary HTN

Case detection testing:

- AM PAC
- AM PRA or PRC (PRA preferred)

Diagnosis of primary hyperaldosteronism

- PAC > 10ng/dL
- AND
- PRA <1.0 ng/dL/hr

CASE DESCRIPTION

- 54-year-old male with unknown past medical history found down outside with multiple bottles of alcohol nearby.
- Obtunded patient with a Glasgow Coma Scale (GCS) of 6, the patient was intubated and admitted to the ICU for Treatment of delirium tremens and Group B Strep bacteremia.
- CT scan of the abdomen on admission was concerning for mild colitis only.
- Daily hypokalemia of 2.8-3, despite aggressive replacement (~420 meq of potassium per day), and a distended abdomen and diffuse diarrhea.
- Abdominal x-ray found that the colon was dilated to 14 centimeter (cm) and he was diagnosed with an acute colonic pseudo-obstruction (Ogilvie's syndrome).
- On day ten, the patient had a colonoscopy for decompression followed by treatment with neostigmine.
- Abdominal x-ray showed a reduction of colonic diameter to 8 cm and the patient’s secretory diarrhea resolved.
- Yet, despite replacement, his potassium values remained resistant and below 3 mmol/L.
- A second neostigmine treatment was performed which resulted in significant bradycardia, causing readmission to the ICU.
- A CT abdomen and pelvis confirmed resolution of the colonic dilation but also read an additional finding of “left sided adrenal gland micronodular changes”.
- Treatment was initiated with spironolactone.

MANAGEMENT & OUTCOMES

- On day fifteen, patient’s potassium level improved to 3.9 mmol/L without any potassium replacement.
- PAC resulted at 24 and the PAC/PRA ratio was 26, confirming primary hyperaldosteronism
- Patient made full recovered and was discharged to a Skilled Nursing Facility on day 21 of hospitalization
- Diagnosis was delayed as the adrenal changes were not noticed until the third CT scan of the abdomen during the admission, however on review, could be seen on previous scans.
- Spironolactone works by competing with aldosterone receptor sites in the distal renal tubules, which increases sodium chloride and water excretion while conserving potassium and hydrogen ions.
- Treatment of Primary Hyperaldosteronism depends on laterality.
  - If unilateral, surgical management preferred
  - If bilateral, medical management preferred with MRAs
- Management of Ogilvie’s
  - Supportive care
  - Neostigmine
  - Decompression – colonoscopy, transanal, surgical

REFERENCES