A COMPLEX CASE OF MYXEDEMA COMA COMPLICATED BY Rhabdomyolysis AND ACUTE RENAL FAILURE

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Background

Hypothyroidism, one of the most prevalent endocrine disorders worldwide has a wide range of clinical presentations, ranging from asymptomatic to myxedema coma. First introduced in the beginning of 1900 it was seen as the result of severe and long-term untreated hypothyroidism.1 The term myxedema coma refers to a life-threatening form of a decompensated hypothryoid state, whose mortality is quite high. This is a true medical emergency. Mortality rate can range from 25-60%.2

Literature reveals that most cases are a result of infections, septicemia, CVA, CHF, GI bleeding, physical stress (cold exposure).1 The most salient feature of myxedema coma is not pitting edema, nor the patient being in a coma, but rather the most salient feature is deteriorating mentation.1

Complications of myxedema coma include: coma, respiratory failure, myocardial ischemia, sepsis, GI hemorrhage, acute renal failure and etc.3 Not reported much in literature, we present a case of myxedema coma leading to acute renal failure in the setting of rhabdomyolysis.

Case Presentation

50-year-old female presented to the ED with AMS

- PMH: Hypothyroidism (previously prescribed 75 mcg levothyroxine)
- SH: Homeless & sleeps in tent
- Vitals upon admission: T 94.9F, BP 84/56, HR72, RR20, 95% RA
- Labs upon admission: Blood glucose 46, TSH 129 with T4 of 0.5, lactic acid of 4.5, AST 837, ALT 269, CPK 250, UA unremarkable
- Imaging: CXR showed left lung base with mild hazy opacity. CT head WO contrast unremarkable

Management:

- In the ED/ICU patient given 200 mg levothyroxine, two 1L boluses LR, 100mg hydrocortisone tid
- Patient developed HAGMA
- Repeat CPK the following day was 29,606
- Treated with aggressive IVF rehydration (LR)
- Patient’s mentation improved and was continued on levothyroxine 75 mcg daily
- Patient did not require dialysis and CPK trended down over the following 5 days

Clinical Pearls & Takeaways

- Myxedema coma should be treated with loading dose of T4 (200-400 mcg) with hydrocortisone 100mg q8hrs to avoid adrenal crisis
- Lithotryonine (T3) can also be used in myxedema coma cases as adjunct to T4, but there is a weak recommendation and low quality evidence5
- In rhabdomyolysis CPK increases within the first 12 hrs, and peaks in 2-3 days (up to 3-5 days)

References


Figure 2: The following highlights pertinent laboratory findings from the patient’s admission. One thing to highlight is the acute renal failure seen during this admission. Initially we do not see evidence of HAGMA, but on day 2-3 of hospitalization we see evidence of such and at that point CPK was found to be 320,000.

Figure 3: Mild hazy opacity at the left lung base with some superimposed ill-defined nodularity.

Figure 4: Low voltage EKG showing sinus bradycardia.