

“Chronic COPD with acute exacerbation and incidental hyponatremia”

CATEGORY: Clinical Inquiry

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ABSTRACT: Introduction: Hyponatremia is one of the most common electrolyte disturbances seen in hospitalized patients. Patients with history of chronic COPD and associated hospitalizations for exacerbations can have different outcomes if associated with severe hyponatremia. In an observational review of 424 patients, R. Chalela et. Al reported 67% prevalence of hyponatremia on admission, 15.8% frequency of hyponatremia and 6% persisted with low sodium levels either at their death or time of discharge. The increase in mortality is evident in those with severe hyponatremia. The pathophysiology of hyponatremia in hospitalized patients can vary with different clinical conditions, however paraneoplastic etiologies is highly suspicious in COPD patients who have no clear etiology of hyponatremia. Mental status changes can be seen with severe hyponatremia, however moderate hyponatremia (Na < 130 meq) should be monitored judiciously as it exhibits better discriminatory power of death prediction. Case presentation: We present a case of 58-year-old Caucasian female with no significant past medical history who presents with several weeks of worsening cough and shortness of breath. It was associated with hemoptysis, decrease appetite and weight loss with history of 40 PPY cigarette smoking. On primary survey, her airway was patent, respiratory rate was 18 breaths per minute with an oxygen saturation of 96% on 2 liters' oxygen via nasal cannula. Decreased breath sounds as well as bilateral diffuse wheezing and rhonchi were auscultated. Heart rate was 106 beats per minute with a blood pressure of 132/74 mm Hg. Clinically, the patient appeared calm and hemodynamically stable; neurologically, she was non-focal without any deficits. Secondary survey was grossly unremarkable aside from mild mucosal cyanosis and clubbing of fingers. Chest X-ray demonstrated retro-cardiac airspace opacity, possibly related to pneumonia versus atelectasis (Fig. 1). CT Chest without IV contrast demonstrated new lobular mass like opacity in the medial infrahilar left lower lobe with adjacent smaller nodular opacities worrisome for primary bronchogenic carcinoma and possible post-obstructive pneumonia (Fig. 2). She was started on Vancomycin and Zosyn to treat her pneumonia and her lung biopsy read small cell carcinoma of lung. Her hyponatremia was moderate to severe and fluctuant through out her hospital course (Fig. 3). Patient was seen by oncologist who recommended outpatient chemotherapy treatment. Pulmonologist reported poor prognosis and upon further discussion with patients' family, she was made DNR/DNI. Discussion: This case illustrates the prompt evaluation of hyponatremia in hospitalized patients and judicious monitoring of sodium levels. In a case control study of 166 patients, Abouem et. Al reported that hyponatremia was present in 2.4% of patients with a blood analysis and was associated independently with solid tumors and hospital death. Our patient in this case did not have PMD due to insurance issues, but it reflects the importance of smoking cessation, diagnosing the disease (COPD) in early stages, and initiating early treatment. Many cases of hyponatremia have been reported in different clinical conditions, however the importance of paraneoplastic syndrome producing ADH in realm of small cell carcinoma of the lung, reflects the importance of hyponatremia in COPD patients.