Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

development of improved diagnostic tests, risk stratification of patients before testing, and the use of standardized protocols for the management of patients who test negative.[5] These strategies, combined with strategic use of repeated testing, will preserve limited resources and provide the best route toward ending the SARS-CoV-2 pandemic.

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Severe Hyponatremic Encephalopathy in a Patient With COVID-19

To The Editor: Coronavirus disease 2019 (COVID-19) has been declared a pandemic. The illness manifests mainly with fever and respiratory symptoms. We present the first reported case of life-threatening hyponatremia in a patient with COVID-19.

A 56-year-old woman was brought to the hospital for sudden-onset altered mental status. The patient had been at work on the day of admission. She had sore throat and, within hours, developed confusion and incoherent speech. Her only comorbidity was hypertension, for which she had been treated with hydrochlorothiazide for 3 years. She was taking no other medication or supplement. Vital signs were stable, with blood pressure of 110/70 mm Hg. On examination, she was obtunded and without focal neurologic deficits. Laboratory testing showed serum sodium 115 mEq/L, potassium 3.2 mEq/L A 55-year-old man with history of hyperlipidemia and previou, and magnesium 1.2 mmol/L. Serum osmolality was 247 mOsm/kg, whereas urine osmolality was 670 mOsm/kg. Computed tomography scan of the head and chest x-ray film showed no acute pathology. Urine toxicology results were negative. She was clinically euvolemic and diagnosed with acute-onset severe hyponatremia from an antidiuretic hormone (ADH)-dependent pathway. She was treated with 3% hypertonic saline and desmopressin. Being at the epicenter of the COVID-19 pandemic, SARS-CoV-2 testing was performed, and results came back positive. Computed tomography of the chest revealed ground-glass opacities bilaterally. Influenza testing, blood cultures, and urinalysis results were negative. Thyroid stimulating hormone level was normal, and serum cortisol was appropriately elevated. The patient's serum sodium and mental status normalized over the next 4 days, and she was advised to stop taking hydrochlorothiazide on discharge. She denied developing any respiratory symptoms on a telemedicine visit 10 days postdischarge.

Severe hyponatremia (<120 mEq/L) may present with manifestations of cerebral edema including obtundation, seizures, coma, respiratory arrest, and death. Thiazides are known to cause severe hyponatremia that can simulate a syndrome of inappropriate ADH-like picture associated with hypokalemia. The risk of thiazide-induced hyponatremia is present for as long as 10 years after initiation of therapy.[1] In patients on thiazides, severe hyponatremia could be precipitated by a lung infection, similar to our patient.[2] Pneumonia not only precipitates hyponatremia in patients on thiazides but can cause it independently by an ADH-dependent pathway. Although classically described in legionella pneumonia, hyponatremia occurs with a variety of bacterial, viral, and fungal lung pathogens.[3] Mechanisms and risk factors of thiazide- and pneumonia-induced hyponatremia and their interplay is shown in the Figure.[3,4]

As first-line antihypertensive agents, thiazides are widely prescribed. In 2012, in the United States alone, an

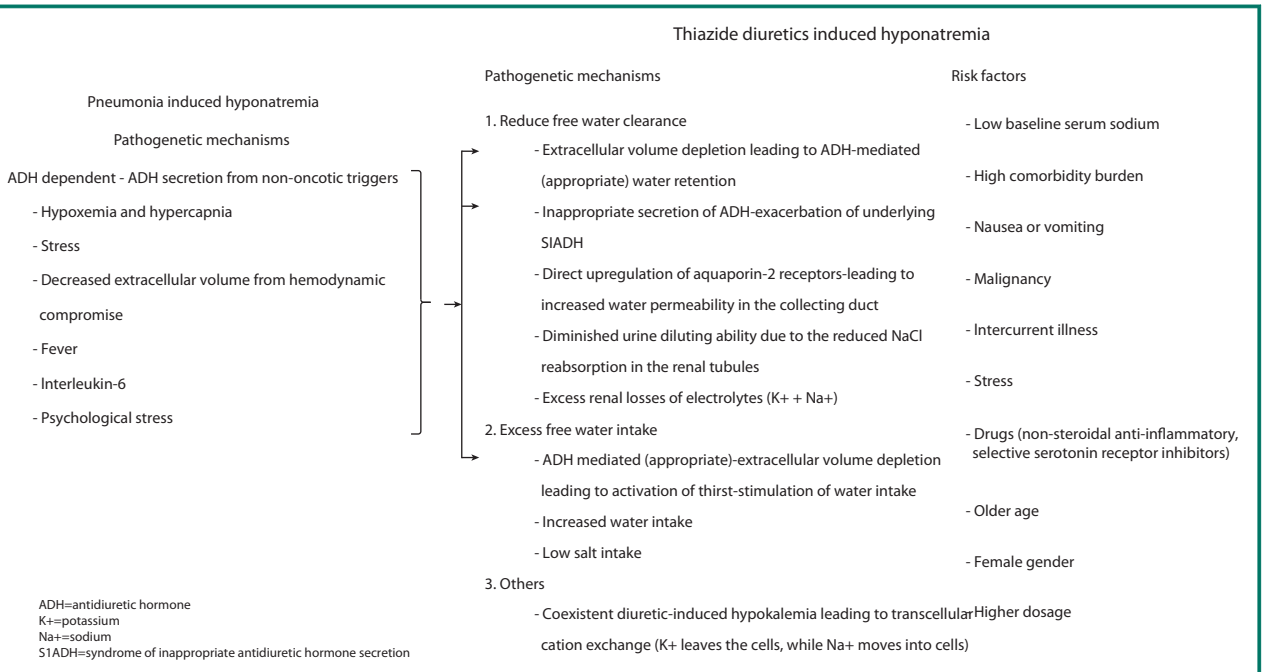

FIGURE. Pathogenetic mechanisms and risk factors for thiazide-induced hyponatremia, pneumonia-induced hyponatremia, and their association. ADH = antidiureic hormone; K+ = potassium; SIADH =syndrome of inappropriate antidiuretic hormone secretion.

estimated 30 million hypertensive patients were taking thiazides.[5] Approximately 30% of patients on thiazides develop hyponatremia.[1] Viral pneumonia via ADH-dependent pathways can facilitate the development of hyponatremia in patients on long-term thiazide therapy, as observed in our patient. Remarkably, our patient had no respiratory manifestations from COVID-19 pneumonia. Rather, she presented with encephalopathy from hyponatremia, a consequence of viral pneumonia for patients on long-term thiazide therapy.

According to estimation models from the Imperial College of London, ~81% of the US population will be afflicted with COVID-19. This places the 30 million people on thiazides at risk for COVID-19–induced hyponatremia.[5] It is imperative that primary care physicians be aware of this mostly unrecognized effect of the current pandemic and be prepared to adjust accordingly. We recommend the cautious use of thiazide in the management of high blood pressure during the current COVID-19 pandemic. Closer monitoring of symptoms and laboratory values might be warranted.

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Dying Without COVID-19: End-of-Life Care for an Uninfected Incarcerated Patient

To the Editor: In March, the relative beginning of the COVID-19 pandemic on the East Coast, we cared for a middle-aged woman with end-stage chronic hepatic and renal failure. This medically complex patient was matched by an equally complex social situation, wherein she had been taken to the