Fatal central pontine myelinolysis in a patient with uncontrolled HIV and normal sodium levels

K.K. Girdhar, MPH[1*], V.R. Starnes[1], P.R. Saraiya, MD[1], J.A. Kammeyer MD, MPH[1]

[1]Division of Infectious Diseases, Department of Medicine, The University of Toledo, Toledo, OH 43614

*Corresponding author: joel.kammeyer@utoledo.edu

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Introduction: Central pontine myelinolysis (CPM) is a demyelinating process of the pons and CNS. While the etiology of CPM remains unclear, the condition is often associated with iatrogenic rapid correction of hyponatremia. CPM is characterized by a breakdown in the blood-brain-barrier triggered by osmotic stress related to electrolyte imbalances. While HIV affects the nervous system in up to 90% of patients, CPM remains rare.

Case Presentation: A 41-year-old HIV-positive female was admitted for generalized weakness and altered mental status. She was noncompliant with antiretroviral therapy and initial CD4 count was 34. Initial assessment revealed hypertension, anemia, and elevated creatinine. Sodium was 138 mmol/L on admission. MRI on hospital day 3 showed several foci of abnormality in the bilateral caudate nuclei, thalami, basal ganglia, and the pons suggestive of CPM with extrapontine involvement. Lumbar puncture revealed elevated protein with normal cell count, negative culture and meningitis panel. The patient was started on dolutegravir with renally-dosed tenofovir and lamivudine. The patient remained obtunded for her ICU stay. She expired three days later.

Discussion: This case offers an example of CPM in the setting of HIV without sodium imbalance. It is important to consider an osmotic demyelinating process in the differential for neurologic symptoms of HIV and to investigate alternative etiologies of CPM in the absence of electrolyte abnormalities. Treatment of CPM with normal electrolytes includes addressing underlying causes that could precipitate metabolic derangement or increased permeability of the blood-brain barrier; this means management of underlying HIV even in a previously asymptomatic patient.

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